



Bayview Transportation Improvements Project

CITY AND COUNTY OF SAN FRANCISCO, CALIFORNIA

Federal Aid # HP21L-5934 (115)

Draft Environmental Assessment



Prepared by the
State of California Department of Transportation



May 2013

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

5/S



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GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document:

The Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), in cooperation with the City and County of San Francisco (City or San Francisco) has prepared this Environmental Assessment (EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in the City and County of San Francisco, California. The City and County of San Francisco is proposing to use funds from FHWA for this local roadway project. The document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from the project, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this Draft EA. Additional copies of this document as well as the technical studies are available for review at:
 - California Department of Transportation, District 4 Office of Local Assistance, 111 Grand Avenue, Oakland, CA 94623
 - City and County of San Francisco, Department of Public Works, 30 Van Ness Avenue, 5th Floor, San Francisco, CA 94102
- The environmental document is also available for review at:
 - The Bayview/Anna E. Waden Branch Library, 5075 3rd St., San Francisco, CA 94124
 - San Francisco Main Library, 100 Larkin Street, San Francisco, CA, 94102
 - Community Window on the Shipyard, 4634 3rd St., San Francisco, CA, 94124
 - <http://sfdpw.org/index.aspx?page=59>
- We welcome your comments. If you have any comments regarding the proposed project, please send your written comments to the City by the deadline.
- Submit comments via postal mail to:
City and County of San Francisco
Department of Public Works
Attention: Frank Filice, Manager of Regulatory Affairs
30 Van Ness Avenue, 5th Floor, San Francisco, CA 94102
 - Submit comments via email to: bvtransp@sfdpw.org
 - Submit comments by the deadline: July 31, 2013.

What happens next:

After comments are received from the public and reviewing agencies, the Department, as assigned by the FHWA, and the City may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, the City could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available on compact disc (CD). To obtain a copy in this alternate format, please call or write to City and County of San Francisco, Department of Public Works, Attention: Frank Filice, 30 Van Ness Avenue, 5th Floor, San Francisco, CA 94102, (415) 558-4011. Services for the Deaf and Hearing Impaired can be reached at TTY: (415) 554-6799 or use California Relay Service at 1(800) 735-2929 (TDD), or 1 (800) 735-2922 (Voice) or 711.

District 4 -SF-0-CR
Federal Aid # HP21L-5934 (115)

Improve traffic operations from U.S. Highway 101 and Interstate 280 and create a multimodal transportation network within the Hunters Point Shipyard and South Basin industrial areas in the City and County of San Francisco.

Bayview Transportation Improvements Project, located in San Francisco

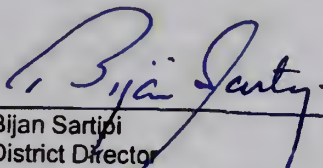
DRAFT ENVIRONMENTAL ASSESSMENT

Submitted pursuant to:
(Federal) 42 USC 4332 (2)(C) and 49 USC 303

THE STATE OF CALIFORNIA
Department of Transportation

5-31-13

Date of Approval



Bijan Sartipi
District Director
California Department of Transportation

Summary

S.1 OVERVIEW

The Bayview Transportation Improvements Project (BTI Project) is being proposed by the City and County of San Francisco (City or San Francisco).

The BTI Project is subject to federal as well as state environmental review requirements because the City proposes the use of federal funds from the Federal Highway Administration (FHWA) and the BTI Project requires an FHWA approval action. Project documentation, therefore, has been prepared in compliance with the National Environmental Quality Act (NEPA). The City is the BTI Project proponent and the lead agency under the California Environmental Quality Act (CEQA). FHWA's responsibility for environmental review, consultation, and any other action required in accordance with applicable Federal laws for this Project is being, or has been, carried out by the California Department of Transportation (Department) under its assumption of responsibility pursuant to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (23 USC 327).

While this BTI Project is subject to the requirements of both NEPA and CEQA, separate environmental documents have been prepared, one that complies with NEPA and another that complies with CEQA. This Environmental Assessment (EA) complies with the requirements of NEPA and other federal environmental laws. Compliance with CEQA and state environmental laws is provided in the Candlestick Point-Hunters Point Shipyard Phase II Redevelopment Project (CP-HPS Plan). The CP-HPS Plan Final EIR was certified by the San Francisco Redevelopment Agency (SFRA) and the San Francisco Planning Commission on June 3, 2010, and the San Francisco Board of Supervisors affirmed the Planning Commission's certification on July 13, 2010. Additional CEQA documentation may be required for Project improvements north of the Hunters Point Shipyard (HPS) Innes gate, and this will be processed by a Class I statutory CEQA exemption (CEQA Guidelines Section 15301 [c][5]) coordinated by the City's environmental review officer.

Following receipt of comments from the public and reviewing agencies, a final environmental document will be prepared. The lead agency may undertake additional environmental and/or engineering studies to address comments. The final environmental document will include responses to comments received on the Draft EA and will identify the preferred alternative. If the decision is made to approve the BTI Project, the Department will decide whether to issue a Findings of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with the NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of Federal, State, and local government, and the State Clearinghouse in compliance with Executive Order 12372.

S.2 PURPOSE AND NEED

S.2.1 PURPOSE

The purpose of the BTI Project is to improve traffic operations within the BTI Project area (refer to Figures 1-2a and 1-2b) to accommodate approved planned growth, develop a more direct access route from U.S. Highway 101 (US 101) and Interstate 280 (I-280) to the Candlestick Point and Hunters Point Shipyard (HPS) areas, and provide multimodal access to the BTI Project area linking it to the rest of San Francisco and the Bay Area region.

S.2.2 NEED

The existing transportation system of discontinuous roadways and limited transit services underserves existing residents and will not accommodate future development. The BTI Project is needed to ensure that the planned development in the area will not overwhelm the existing constrained transportation network in the Southeast Community. Without the BTI Project, future increased transportation demand using the existing deficient roadway network will likely create localized congestion, disproportionately affecting existing residents and businesses, and will fail to adequately serve the planned developments.

S.3 ALTERNATIVES SCREENING PROCESS

As described in Section 1.4.5, *Alternatives Considered But Eliminated from Further Discussion*, iterations of the BTI Project have undergone a comprehensive screening process. As a result of the collaborative screening process and in order to conform to the planning context of the CP-HPS Plan (which has undergone a robust development and screening process of its own, similar to the BTI Project and including the same affected parties [public agencies, interested parties, and stakeholders]), a single revised Build Alternative (which is also the locally preferred alternative) has been developed.

S.4 SUMMARY OF PROJECT EFFECTS

Table S-1 summarizes the environmental effects of the BTI Project and identifies the proposed avoidance, minimization, and/or mitigation measures for each effect that is discussed in Chapter 2 of this environmental document.

Summary

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects ¹	Proposed Avoidance, Minimization and/or Mitigation Measures
LONG TERM EFFECTS		
Land Use	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any unplanned changes to land use. Under the future No Build Alternative, Harney Way is planned for development to accommodate future traffic by other development projects, and may result in reconfiguration of the design of the existing parking lot within CPSRA boundaries, in consultation with State Parks (refer to Appendix A).</p> <p><u>Build Alternative:</u> (Consistency with Plans) The Build Alternative would be generally consistent with local planning goals, policies, and objectives and adverse effects are not anticipated.</p> <p>(Land Use) Apart from implementing an agreed transfer with CPSRA, the BTI Project would not require property acquisitions from any park or recreation facilities. As part of the development of Harney Way, the BTI Project would reconfigure the design of the existing parking lot within CPSRA boundaries, in consultation with State Parks (refer to Appendix A).</p>	N/A
Growth	<p><u>No Build Alternative:</u> The No Build Alternative would not induce unplanned growth.</p> <p><u>Build Alternative:</u> The Build Alternative is not anticipated to induce unplanned growth. Any growth resulting from the Build Alternative would be consistent with the comprehensive redevelopment plan adopted by the City.</p>	N/A
Community: Community Character and Cohesion	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any added benefits to community character or cohesion.</p> <p><u>Build Alternative:</u> The Build Alternative would result in either beneficial effects or no substantially adverse effects on neighborhoods or community cohesion. The BTI Project will extend the existing neighborhood street grid in order to increase accessibility and mobility within the study area, in particular to access new and existing waterfront open space. The Build Alternative has been designed to avoid any residential displacement, thereby ensuring that existing residential areas remain intact.</p>	None proposed.
Community: Relocations and Real Property Acquisition	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any relocations or real property acquisitions.</p> <p><u>Build Alternative:</u> The Build Alternative would require land acquisitions from six private parcels and two public parcels. One parcel would require relocation of an existing gas station sign that indicates the business name and gas prices. The acquisition would have no effect on underground tanks, pumping stations, access, buildings, or canopies. As such, this acquisition would not displace the existing business.</p>	N/A
Community: Environmental Justice	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any effects on minority or low-income populations.</p>	N/A

¹ The No Build Alternative, which assumes the CP-HPS Plan is built out minus the elements included in the BTI Project, is described in detail in Section 1.4.3 *No Build Alternative*.

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects ¹	Proposed Avoidance, Minimization and/or Mitigation Measures
	Build Alternative: The Build Alternative would disproportionately affect minority or low-income populations. However, all the potential adverse effects could be satisfactorily avoided or minimized through the implementation of recommended measures. Because there has been no evidence to suggest that the efficacy of these measures would differ with respect to different population groups, the net result would be the same for all population groups for these resource areas.	Refer to Sections 2.1.7, <i>Cultural Resources</i> , 2.2.2, <i>Water Quality and Stormwater Runoff</i> , 2.2.4, <i>Hazardous Wastes/Materials</i> , 2.2.5, <i>Air Quality</i> , and 2.2.6, <i>Noise and Vibration</i> for the complete text of the avoidance, minimization and/or mitigation measures.
Utilities/ Emergency Services	No Build Alternative: The No Build Alternative would not result in any changes or service disruptions to utilities or emergency services. Build Alternative: (Utilities) The Build Alternative would not result in any long-term utility service disruptions. All utilities would be restored to their existing service. (Emergency Service) The Build Alternative would divert traffic from residential areas; therefore, enhancing accessibility and mobility for San Francisco Police Department (SFPD) and San Francisco Fire Department (SFFD) within the Bayview Hunters Point area.	N/A None proposed. Refer to Section 2.1.4 <i>Utilities/Emergency Services</i> for the complete text of the avoidance, minimization and/or mitigation measures for construction period effects related to utilities/emergency services.
Transportation and Traffic/Pedestrian and Bicycle Facilities	No Build Alternative: The No Build Alternative would not result in any improvements to transportation or traffic/pedestrian or bicycle facilities. Build Alternative: Under the Build Alternative, no adverse traffic (including freeway, ramp junctions, transit, bicycle, or pedestrian) effects under 2035 conditions are anticipated.	N/A None proposed. Refer to Section 2.1.5 <i>Transportation and Traffic/Pedestrian Bicycle Facilities</i> for the complete text of the avoidance, minimization and/or mitigation measures for construction period effects related to transportation and traffic.
Visual/Aesthetics	No Build Alternative: The No Build Alternative would not result in any visual changes. Build Alternative: The Build Alternative would result in the construction of three new retaining walls. The retaining walls are expected to have a low visual effect.	N/A None proposed.
Cultural Resources	No Build Alternative: The No Build Alternative would not result in any effects on cultural resources. Build Alternative: (Historic Architecture) The five architectural resources identified in the architectural area of potential effect (APE) are not historic architectural resources for the purposes of Section 106 of the NHPA. Therefore, under the Build Alternative there is no potential for effects on historic resources. (Archaeological) Build Alternative-related archaeological resources effects resulting from operational sources are not expected.	N/A None proposed. Refer to Section 2.1.7 <i>Cultural Resources</i> for the complete text of the avoidance, minimization and/or mitigation measures for construction period effects related to cultural resources.

Summary

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects¹	Proposed Avoidance, Minimization and/or Mitigation Measures
Hydrology/ Floodplains	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any changes to the existing roadway elevations. Under the No Build Alternative, certain roadways would remain below current City standards.</p> <p><u>Build Alternative:</u> The Build Alternative would be entirely constructed at-grade and would not change the extent or water surface elevation of flooding relative to the existing condition. Additionally, the Build Alternative would include improvements that would bring certain roads up to current City standards.</p>	<p>N/A</p> <p>None proposed.</p>
Water Quality/ Storm Water Runoff	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any changes to the existing water quality and stormwater runoff conditions.</p> <p><u>Build Alternative:</u> Because the Build Alternative consists of existing impervious improvements, it would result in a minimal permanent increase of impervious surfaces and a minimal permanent increase in runoff and pollutant loading.</p>	<p>N/A</p> <p>None proposed. Refer to Section 2.2.2 <i>Water Quality and Storm Water Runoff</i> for the complete text of the avoidance, minimization and/or mitigation measures for construction period effects related to water quality and storm water runoff.</p>
Geology/Soils/ Seismic/Topography	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any changes to the existing geology, soils, or seismic conditions.</p> <p><u>Build Alternative:</u> The Build Alternative-related geology, soils, and seismic effects resulting from operational sources are not expected.</p>	<p>N/A</p> <p>None proposed. Refer to Section 2.2.3 <i>Geology/Soils/Seismic/Topography</i> for the complete text of the avoidance, minimization and/or mitigation measures construction period effects related to geology, soils, and seismic conditions.</p>
Hazardous Waste/ Materials	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any effects related to hazardous waste/materials.</p> <p><u>Build Alternative:</u> The Build Alternative-related hazardous waste/materials effects resulting from operational sources are not expected.</p>	<p>N/A</p> <p>None proposed. Refer to Section 2.2.4 <i>Hazardous/Waste Materials</i> for the complete text of the avoidance, minimization and/or mitigation measure for construction period effects related to hazardous materials/waste.</p>

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects ¹	Proposed Avoidance, Minimization and/or Mitigation Measures
Air Quality	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any effects related to air quality.</p> <p><u>Build Alternative:</u> The Build Alternative-related air quality effects resulting from operational sources are not expected.</p>	N/A
Noise and Vibration	<p><u>No Build Alternative:</u> The No Build Alternative would result in increased noise levels at various locations along the Project alignment.</p> <p><u>Build Alternative:</u> The Build Alternative would result in increased noise levels at various locations along the Project alignment. Noise abatement was considered for segments B, E, and F of the Project area. However, abatement (sound barriers) were not proposed because of the configuration of existing land uses (street frontages, driveways, lack of ROW), and in one case would exceed the allowance (for noise abatement per benefitted receptor).</p>	N/A
Natural Communities	<p><u>No Build Alternative:</u> Under the No Build Alternative, which assumes the CP-HPS Plan is built out minus the elements included in the BTI Project, up to 334 trees would be removed in the study area. This includes 138 trees along Harney Way in the Project area. Under the CP-HPS Plan, and thus the No Build Alternative, more than 334 trees would be planted to replace those removed and further increase street tree density.</p> <p><u>Build Alternative:</u> Effects on serpentine grasslands and outcrops, and to willow scrub, would be entirely avoided. There is limited nature of effects on disturbed coastal scrub, and low quality of habitat provided by this coastal scrub.</p> <p>The Build Alternative would increase developed and ornamental community/land use types within the Project Area. It would increase the number of street trees in this area by both replacing the 255 removed trees and planting additional infill trees along some roadways to increase street tree density. Protected trees that occur along Cargo Way would not be removed.</p>	<p>Refer to Section 2.2.6 <i>Noise</i> for the complete text of the avoidance, minimization and/or mitigation measures for construction period effects related to noise.</p> <p>None proposed. Refer to Section 2.3.1 <i>Natural Communities</i>.</p> <p>None proposed.</p>
Wetlands and Other Waters of the U.S.	<p><u>No Build Alternative:</u> The No Build Alternative would not result in any effects on wetlands and Other Waters of the U.S.</p> <p><u>Build Alternative:</u> The Build Alternative has been designed to avoid effects on the only potentially jurisdictional wetlands in the BTI Project area. The only BTI Project feature that would occur on the east side of Alana Way where the small patch of willow scrub is located is a single pole for a traffic signal. The BTI Project has been designed to locate this pole outside of the willow scrub to avoid effects on this wetland. The BTI Project would not affect other waters (e.g., waters associated with San Francisco Bay).</p>	N/A
Plant Species	<u>No Build Alternative:</u> The No Build Alternative would not result in any effects on special-status plant species.	N/A

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects ¹	Proposed Avoidance, Minimization and/or Mitigation Measures
	<u>Build Alternative:</u> No special-status plants are known or expected to occur within the BTI Project limits.	None proposed.
Animal Species	<u>No Build Alternative:</u> The No Build Alternative would not result in any effects on special-status animal species. <u>Build Alternative:</u> No substantial effects on special-status animal species would occur as a result of the Build Alternative, and no injury or mortality of individual special-status animals would occur.	N/A None proposed. Refer to Section 2.3 <i>Biological Environment</i> for the complete text of the avoidance, minimization and/or mitigation measure for construction period effects related to nesting birds.
Threatened and Endangered Species	<u>No Build Alternative:</u> The No Build Alternative would not result in any effects on federally listed, candidate, or proposed species; designated habitat for such species; or essential fish habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act. <u>Build Alternative:</u> No federally listed, candidate, or proposed species; designated habitat for such species; or essential fish habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act would be affected by the Build Alternative.	N/A None proposed.
Invasive Species	<u>No Build Alternative:</u> The No Build Alternative would not result in any effects on invasive species. <u>Build Alternative:</u> None of the species on the California list of noxious weeds is currently used by the Department for erosion control or landscaping in San Francisco. Nevertheless, there is some potential for the Build Alternative to cause the spread of nonnative, invasive plant species that are already present in the project vicinity. Due to the highly disturbed/developed nature of the majority of the BTI Project area and its vicinity, such an effect would have little effect on existing natural communities, as most of the vicinity lacks sensitive habitats that would be degraded by such invasions. However, serpentine communities at the edge of, or immediately adjacent to, the BTI Project area along Innes Avenue and Hunters Point Boulevard are sensitive communities, and BTI Project activities could affect these native-dominated communities if they resulted in the colonization or spread of nonnative plants into the serpentine communities.	N/A Refer to Section 2.3 <i>Biological Environment</i> for the complete text of the avoidance, minimization and/or mitigation measure.
CONSTRUCTION EFFECTS (Build Alternative Only)		
Land Use	(Parks and Recreational Facilities) The Build Alternative would generate minor disruption (through noise, air quality, and accessibility) to adjacent recreational facilities. However, the Project would implement measures to minimize harm to parks and recreational facilities and the Section 4(f) property during construction, including providing for local access, limiting working hours, reconfiguring the parking lot, working with the community, establishing temporary construction zones, and restoring parklands and facilities to prior conditions. For the Section 4(f) property, the City will coordinate with State Parks on alternate access issues and parking.	Refer to Section 2.1.1 <i>Land Use</i> for the complete text of the avoidance, minimization and/or mitigation measures.

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects ¹	Proposed Avoidance, Minimization and/or Mitigation Measures
Utilities/Emergency Services	<p>(Utilities) Construction of the Build Alternative could include utility interruptions. This could include limited interruptions in service for gas, water, telephone, television/cable, and internet service. No interference in power is anticipated as PG&E would put customer loads on alternate lines until the connections are re-established.</p> <p>(Emergency Services) Construction of the Build Alternative would include potential detours/roadway closures affecting SFPD and SFPD. In general, short-term street closures or detours are expected to have little or no effect on the ability of emergency services to access the BTI Project area.</p>	<p>Refer to Section 2.1.4 <i>Utilities/Emergency Services</i> for the complete text of the avoidance, minimization and/or mitigation measures.</p> <p>Refer to Section 2.1.4 <i>Utilities/Emergency Services</i> for the complete text of the avoidance, minimization and/or mitigation measures.</p>
Transportation and Traffic/Pedestrian and Bicycle Facilities	The Build Alternative would result in effects on transportation and circulation during construction. Construction activities would generate traffic from construction workers, including movement of construction equipment and vehicles, hauling of materials, and deliveries of supplies. The Project would be required to implement a Construction Traffic Management Program (TMP).	Refer to Section 2.1.5 <i>Transportation and Traffic/Pedestrian Bicycle Facilities</i> for the complete text of the avoidance, minimization and/or mitigation measures.
Cultural Resources	Build Alternative ground-disturbing activities could result in the potential effect to recorded archaeological resources or areas of documented sensitivity for archaeological resources.	Refer to Section 2.1.7 <i>Cultural Resources</i> for the complete text of the avoidance, minimization and/or mitigation measures.
Water Quality and Storm Water Runoff	<p>During Build Alternative construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. Soil erosion potential would have minimal effect since the project takes place in a very urbanized area. Soil erosion potential would occur on pervious surfaces or during the installation of road beds when the previous surfaces are exposed to rainfall and construction activities.</p> <p>Additionally, during storm events, erosion and sedimentation could occur at an accelerated rate and chemicals, liquid products, and petroleum products (such as paints, solvents, and fuels), concrete-related waste, and other construction debris and waste may be spilled or leaked, and have the potential to discharge into receiving waters.</p>	Refer to Section 2.2.2 <i>Water Quality and Storm Water Runoff</i> for the complete text of the avoidance, minimization and/or mitigation measures.
Geology/Soils/Seismic/Topography	Construction of the Build Alternative could result in effects related to groundshaking, liquefaction/land spreading/seismic settlement, landslides/slope instability, consolidation settlement, corrosion, and soil erosion.	Refer to Section 2.2.3 <i>Geology/Soils/Seismic/Topography</i> for the complete text of the avoidance, minimization and/or mitigation measures.

Summary

Table S-1. Summary of Project Effects and Avoidance, Minimization, and/or Mitigation Measures

Topic Areas	Alternative Effects¹	Proposed Avoidance, Minimization and/or Mitigation Measures
Hazardous Waste/Materials	Under the Build Alternative, there is potential for exposure to subsurface hazardous wastes, elevated levels of organic and inorganic compounds in groundwater, and radiological material present in the subsurface soils. Additionally, portions of the BTI Project area are underlain by naturally occurring asbestos-containing rock. There is potential for adverse effects related to exposure to hazardous materials during Project construction.	Refer to Section 2.2.4 <i>Hazardous/Waste Materials</i> for the complete text of the avoidance, minimization and/or mitigation measure.
Air Quality	Construction of the Build Alternative could result in emissions pollutants in the form of construction dust and asbestos dust.	Refer to Section 2.2.5 <i>Air Quality</i> for the complete text of the avoidance, minimization and/or mitigation measures.
Noise	During construction of the Build Alternative, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by the Department's Standard Specifications Section 14-8.02, "Sound Control Requirements," which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.	Refer to Section 2.2.6 <i>Noise</i> for the complete text of the avoidance, minimization and/or mitigation measure.
Biological Resources	Construction of the Build Alternative could disturb nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code.	Refer to Section 2.3 <i>Biological Environment</i> for the complete text of the avoidance, minimization and/or mitigation measure.

Note: The above table is intended to provide a summary of the resource topical areas analyzed in the environmental document and the alternative effects. For effects that require proposed avoidance, minimization, and/or mitigation measure, a reference to location where that measure is described in the EA is provided.

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Chapter 1 Proposed Project

1.1 INTRODUCTION

The California Department of Transportation (Department), as assigned by the Federal Highway Administration (FHWA), in cooperation with the City and County of San Francisco (City or San Francisco) proposes to improve the existing roadway system and create a multimodal transportation network within the Southeast Community¹ of the City. The total length of the Bayview Transportation Improvements Project (BTI Project) from end to end is 9.9 miles, with a total of 14.5 miles of roadway.

The BTI Project area (illustrated in Figure 1-1 and Figures 1-2a and 1-2b) is located within the existing Bayview Hunters Point and Hunters Point Shipyard (HPS) areas (as identified in the San Francisco General Plan Area Plan Map) (City of San Francisco 2012). Current land uses in the Bayview Hunters Point area are residential, neighborhood retail (commercial), and office. The HPS area is a mostly vacant former naval shipyard that once included an industrial area. Within the existing BTI Project limits are paved and unpaved roadways, sidewalks, planted medians, ornamental landscaping, street trees, traffic lights, streetlights, and signage. Open space is located along the western shoreline of the San Francisco Bay.

The 2001 Regional Transportation Plan (RTP) prepared by the Metropolitan Transportation Commission (MTC) for the San Francisco Bay Area (Bay Area) included authorization for an environmental study of the BTI Project. The Transportation 2035 Plan prepared by MTC for the San Francisco Bay Area shows partial funding for land acquisition for the BTI Project (MTC 2009). Additional funding for the BTI Project is also being sought under the federal Transportation Infrastructure Finance and Innovation Act (TIFIA), which provides credit assistance for surface transportation projects of national and regional significance.

1.2 BACKGROUND AND HISTORY

The BTI Project is one of several actions being proposed by the City and private entities to redevelop the Southeast Community. The first iteration of the BTI Project was initiated in 2003 (with no project development occurring between 2001 when the RTP was prepared to 2003 when the BTI Project was initiated) with support from project-specific federal funding authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA). The scope of the BTI Project and BTI Project purpose and need have been substantively revised since 2003, in large part based on a robust public outreach effort in the BTI Project area, input from the BTI Ad-hoc Advisory Committee (AAC), and in response to the Candlestick Point–Hunters Point Shipyard Phase II Redevelopment Plan (CP-HPS Plan).² Table 1-1 lists the BTI Project's major milestones.

¹ The "Southeast Community" is defined as the neighborhoods and industrial lands identified in the San Francisco General Plan Area Plan Map as Bayview Hunters Point (including the Executive Park and Candlestick subareas) and HPS.

² The CP-HPS Plan proposes to develop a new mixed-use development in the southeast corner of San Francisco, a relatively isolated area within the City.

Table 1-1. BTI Project Timeline

BTI Project Initiation	The BTI Project was originally conceived in 2003 and formally initiated in May 2004, with the release of the notice of intent (NOI) to prepare a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) on May 18, 2004 and a notice of preparation (NOP) of a California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) issued on June 9, 2004.
BTI Project Scoping Meetings	On July 8, 2004, two combined NEPA/CEQA Scoping meetings were conducted at the Bayview Opera House in San Francisco, California (Scoping Report, City and County of San Francisco 2004).
BTI Project Screening Workshops	On January 22, 2005, a public Alternatives Screening Workshop was conducted (Screening Report, City and County of San Francisco 2005).
BTI Ad-hoc Advisory Committee	On January 31, 2005, the BTI Project team met with the AAC to discuss and receive input on alternatives (Screening Report, City and County of San Francisco 2005).
Coordination with CP-HPS Plan	In 2007 (and concurrent with the ongoing BTI Project environmental evaluation), the City began to integrate the transportation planning under the BTI Project with the land use planning and extensive community outreach that was underway for the CP-HPS Plan. On July 27, 2010 the Board of Supervisors approved the CP-HPS Plan, in a 10-1 vote.
Current BTI Project	The scope of the proposed BTI Project and BTI Project purpose and need was substantively revised. Land use plans for the former HPS evolved to a broader mix of residential, commercial, research and development, and industrial activities and there was a need to connect HPS with Candlestick Point, and other parts of the Bayview District and beyond. This included emphasizing transit, bicycle/pedestrian, and automobile traffic and is generally consistent with the approved changes included in the CP-HPS Transportation Plan (approved June 2010).
Source: ICF International 2012a. The Supplemental Hazardous Materials Report	

1.3 PURPOSE AND NEED³

1.3.1 PURPOSE

The purpose of the BTI Project is to improve traffic operations within the BTI Project area to accommodate approved planned growth, develop a more direct access route from U.S. Highway 101 (US 101) and Interstate 280 (I-280) to the Candlestick Point and HPS areas, and provide multimodal access to the BTI Project area linking it to the rest of San Francisco and the Bay Area region.

1.3.2 NEED

The existing transportation system of discontinuous roadways and limited transit services underserves existing residents and will not accommodate future development. The BTI Project is needed to ensure that the planned development in the BTI Project area will not overwhelm the existing constrained transportation network in the Southeast Community. Without the BTI Project, future increased transportation demand using the existing deficient roadway network will likely create localized congestion, disproportionately affecting existing residents and businesses, and will fail to adequately serve the planned developments.

³ The revised planning context resulted in revision to the BTI Project purpose and need. This was discussed in BTI Project Team Meetings conducted on June 29, 2010 and July 22, 2010.

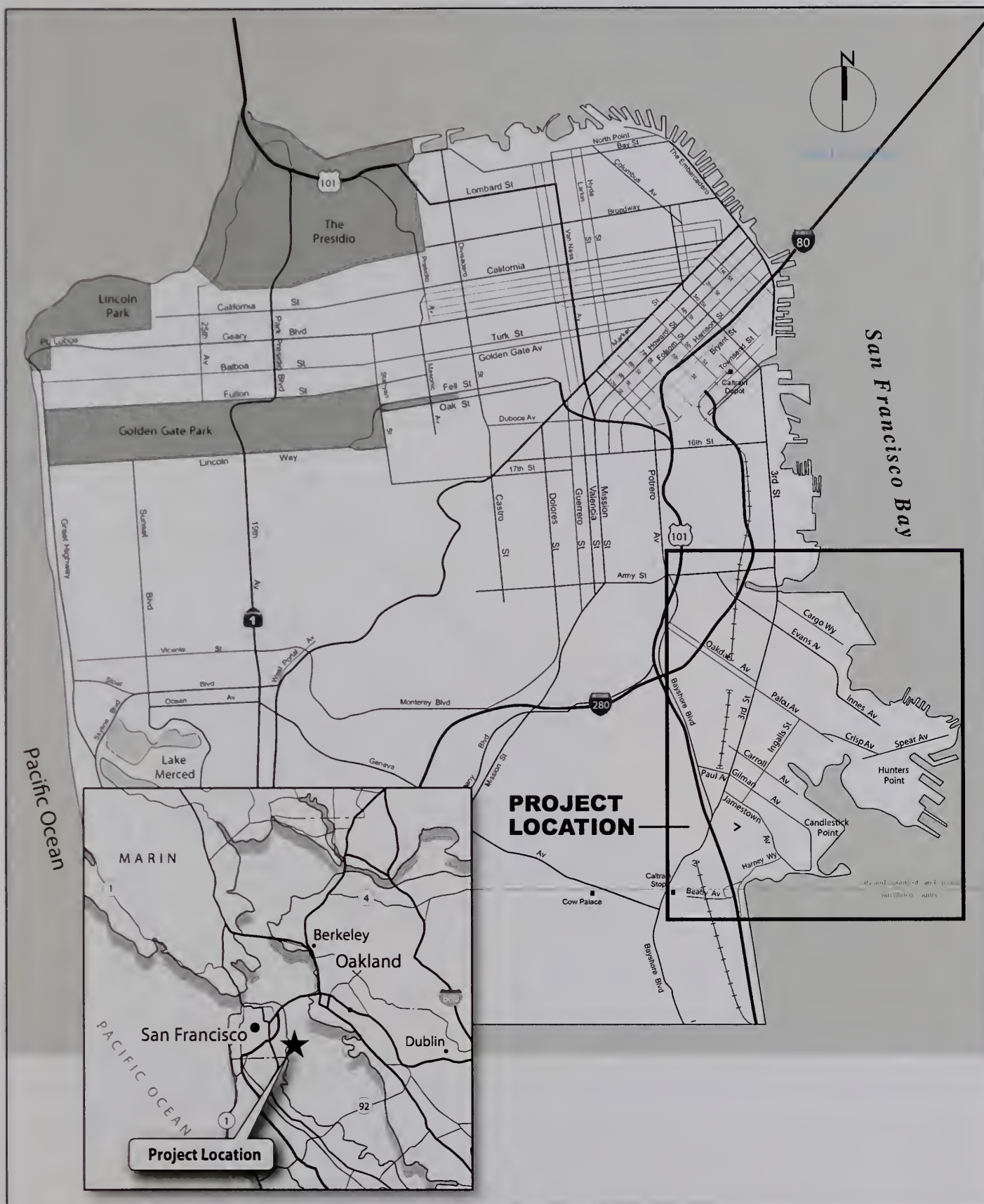






Figure 1-1
Project Location and Vicinity

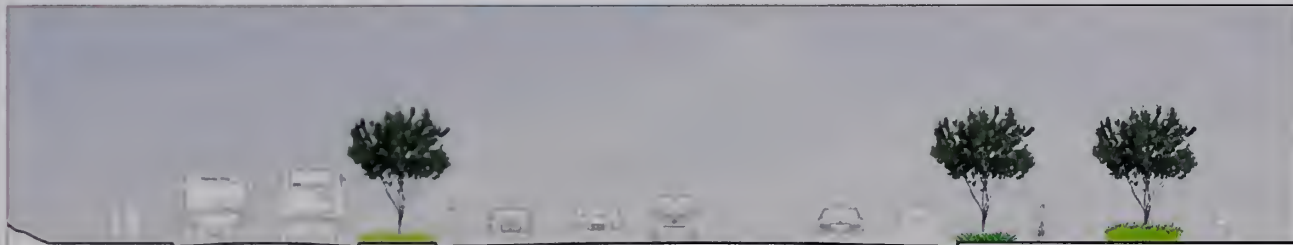
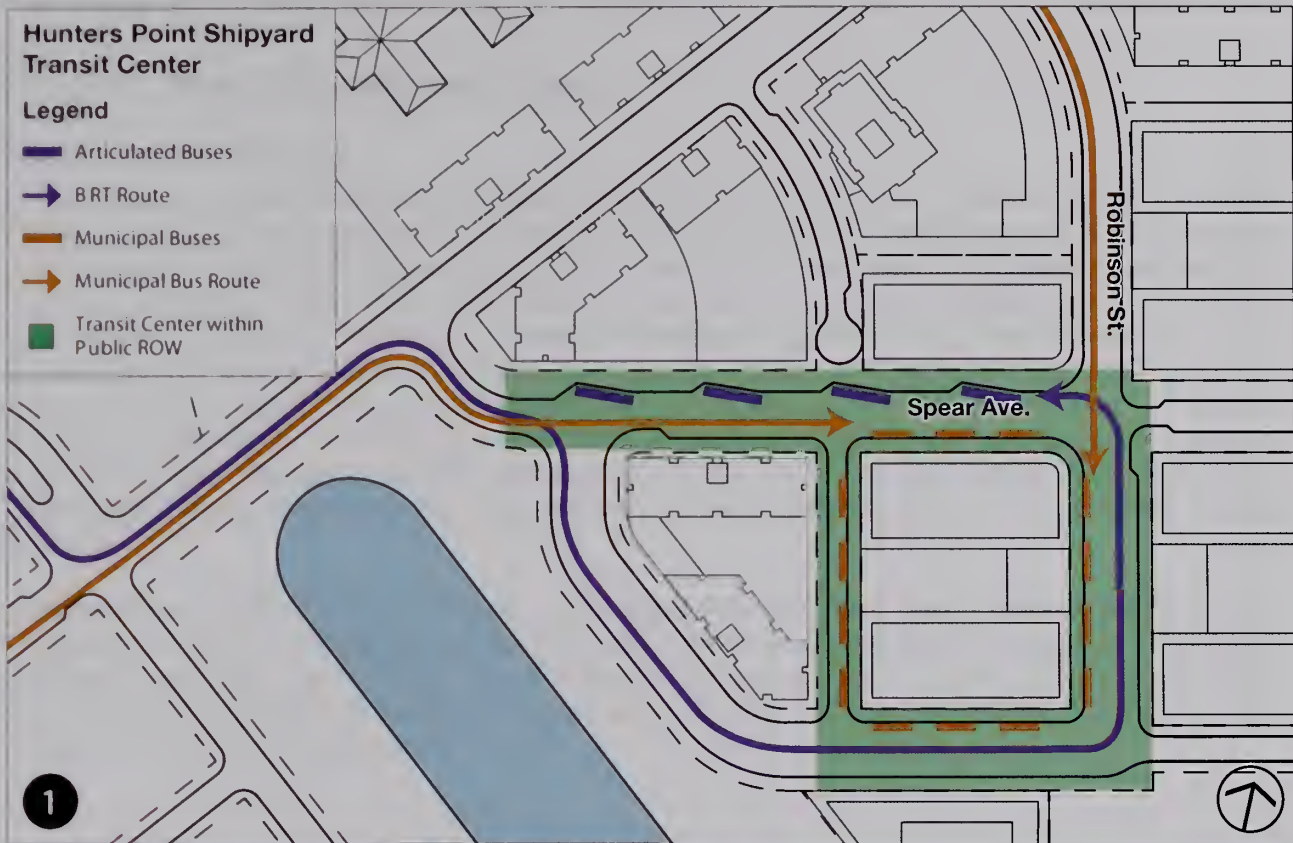


Figure 1-2a
Project Area

Hunters Point Shipyard Transit Center

Legend

-  Articulated Buses
-  B RT Route
-  Municipal Buses
-  Municipal Bus Route
-  Transit Center within Public ROW



2 Harney Way – Multi-modal Boulevard



Sidewalk / Intersection Bulb Out with New Planting Areas, Trees, & Parking
Bike Lane
Travel Lane
Travel Lane
Bike Lane
Sidewalk / Intersection Bulb Out with New Planting Areas, Trees, & Parking
R.O.W.

Typical Neighborhood Street with Pedestrian and /or Bike Improvements *

*For illustrative purposes only. Cross sections and lane configurations vary.



Sidewalk with New Planting Areas & Trees
Bike Lane
Travel Lanes
Travel Lanes
Bike Lane
Sidewalk with New Planting Areas & Trees

Typical Auto Arterial with Pedestrian and /or Bike Improvements *

*For illustrative purposes only. Cross sections and lane configurations vary.

Figure 1-2b
Transit Center and Representative Cross Sections

1.3.2.1 TRANSPORTATION/TRANSIT

Roadway Deficiencies

The existing roadway infrastructure in much of the BTI Project area does not comply with the City's adopted street standards, codified in the San Francisco Better Streets Plan (adopted December 2010, effective January 16, 2011).⁴ Many of the roadways, curbs, sidewalks, parking, and no-parking zones in the BTI Project area are considered deficient (e.g., cracking, disintegration, rutting, embedded rail lines) or lacking altogether (e.g., Fischer Avenue, Crisp Road, Carroll Avenue, Arellous Walker Drive; refer to Table 1-2). The lack of parking signage in the area often results in automobiles and trucks blocking access to loading docks. Double-parked vehicles further constrain roadway access. Lack of street signage and pavement striping in some areas effectively reduces the capacity of the roadways and unmarked/unsignalized crossings make pedestrian and bicycle routes unclear (see *Pedestrian and Bicycle Access* below).

Approximately 70% of the BTI Project street segments are considered deficient based on the reasons stated above. Furthermore, existing deficiencies would be further exacerbated by travel demand associated with future developments in and adjacent to the BTI Project area. Determination of roadway deficiency was based on review of aerial images from 2007, site visits, and engineering judgment.

⁴The Better Streets Plan creates a unified set of standards, guidelines, and implementation strategies to govern how the City designs, builds, and maintains its pedestrian environment. The Plan carries out the intent of the Better Streets Policy (Ordinance 33-06) adopted February 6, 2006. Chapter 4.1 of this Plan covers Street Types (including commercial, residential, and industrial streets) and Chapter 4.2 covers overall streetscape guidelines (intersection design, sidewalk widths and zones, streetscape layout). Specific deviations from the Plan guidance include sidewalk widths (see Figure 4.3 of the Plan which specifies sidewalk minimum widths of 8 feet or wider).

Table 1-2. BTI Project Segments Summary: Characteristics and Operating Conditions

BTI Project Segment	Segment		Study Intersection s Along Segment ^{1a}	Deficient Roadway ^{1b} (Y/N)	Non-Motorized Transportation Facilities Present?			Road Way Capacity ⁵ (ADT)	Existing Conditions		2035 No Build	
	Street	Extent			Side-walks ² (Y/N)	Cross-walks ³ (Y/N)	Bicycle Lanes ⁴ (Y/N)		PM Peak Hour Volumes ⁶	ADT ⁷ (est.)	PM Peak Hour Volumes ⁸	ADT (est.)
A1	Cargo Way	Illinois St to Jennings St	10	Y	Y	Y	Y	37,400	530	5,300	2,150	21,500
A2	Jennings St	Cargo Way to Evans Ave	22	Y	Y	N	Y	18,700	170	1,700	1,280	12,800
B1	Hunters Pt Blvd	Jennings St and Innes Ave to Earl St	22, 23, 24	N	Y	N	N	28,900	140	1,400	2,400	24,000
B2	Innes & Donahue Sts	Earl St to Donahue St	24, 25	N	Y	N	N	18,700	130	1,300	1,500	15,000
B3	Robinson St	Donahue St	x ⁹	Y	N	N	N	x ¹⁰	x	x	x	x
B4	Robinson St	Donahue St	X	Y	N	N	N	x	x	x	x	x
B5	Lockwood St	Donahue St	X	Y	N	N	N	x	x	x	x	x
B6	Lockwood St	Donahue St	X	Y	N	N	N	x	x	x	x	x
B7	Fischer Ave	Crisp Ave	--	Y	N	N	N	--	--	--	--	--
B8	Fischer Ave	Crisp Ave	--	Y	N	N	N	--	--	--	--	--
B9	Crisp Ave	Stadium Outer Ring Rd	--	Y	N	N	N	--	--	--	--	--
B10	Crisp Ave	Arelious Walker	--	Y	N	N	N	--	--	--	--	--
B11	Crisp Ave	Griffith St to Arelious Walker	26	Y	N	N	N	--	--	--	1,500	15,000
B12	Palou Ave	Third St to Griffith St	14, 26, 27, 28	N	Y	Y	N	18,700	320	3,200	1,300	13,000
C1	Griffith St	Thomas Ave to Palou Ave	26	N	Y	N	N	18,700	270	2,700	1,000	10,000
C2	Thomas Ave	Ingalls St to Griffith St	29	Y	Y	N	N	18,700	90	900	900	9,000
C3	Ingalls St	Carroll Ave to Thomas Ave	29, 30	N	Y	N	N	18,700	270	2,700	1,400	14,000
C4	Carroll Ave	Ingalls St to Hawes	30	Y	N	N	N	28,900	90	900	1,800	18,000
C5	Carroll Ave	Ingalls St	--	Y	N	N	N	28,900	--	--	--	--

Table 1-2. BTI Project Segments Summary: Characteristics and Operating Conditions

Segment			Study Intersection s Along Segment ^{1a}	Deficient Roadway ^{1b} (Y/N)	Non-Motorized Transportation Facilities Present?			Road Way Capacity ⁵ (ADT)	Existing Conditions		2035 No Build	
BTI Project Segment	Street	Extent			Side-walks ² (Y/N)	Cross-walks ³ (Y/N)	Bicycle Lanes ⁴ (Y/N)		PM Peak Hour Volumes ⁶	ADT ⁷ (est.)	PM Peak Hour Volumes ⁸	ADT (est.)
C6	Carroll Ave	Ingalls St	--	Y	N	N	N	28,900	--	--	--	--
C7	Arelious Walker	Evans Ave	--	N	N	N	N	28,900	--	--	--	--
D1	D St	Fischer Ave to Spear Ave	X	Y	N	N	N	X	X	X	X	X
D2	D St	Spear Ave to Nimitz Ave	X	Y	N	N	N	X	X	X	X	X
D3	Spear Ave	Fischer Ave to D St	X	Y	N	N	N	X	X	X	X	X
E1	Arelious Walker Dr	Harney Way to Ingerson Ave	X	Y	N	N	N	X	X	X	X	X
E2	Arelious Walker Dr	Ingerson Ave to Gilman Ave	32	Y	N	N	N	28,900	--	--	2,300	23,000
E3	Gilman Ave	Arelious Walker Dr to Earl St	32	N	N	N	N	28,900	140	1,400	400	4,000
E4	Gilman Ave	Earl St to Donahue St	32	N	Y	Y	N	28,900	140	1,400	400	4,000
E5	Harney Way Ext	P St to 9 th St/8 th St	X	Y	N	N	N	X	X	X	X	X
E6	Harney Way Ext	9 th St/8 th St to Ingerson	X	Y	N	N	N	X	X	X	X	X
E7	Harney Way Ext	Ingerson Ave to Gilman Ave	X	Y	N	N	N	X	X	X	X	X
E8	Harney Way Ext	Gilman Ave to Fitzgerald Ave	X	Y	N	N	N	X	X	X	X	X
E9	Harney Way Ext	Fitzgerald Ave to Egbert Ave	X	Y	N	N	N	X	X	X	X	X
E10	Egbert Ave	Arelious Walker East	X	Y	N	N	N	X	X	X	X	X
E11	Egbert Ave	Arelious Walker East	X	Y	N	N	N	X	X	X	X	X
E12	Jamestown Ave	Third St to Harney Way	20	Y	Y	N	N	18,700	170	1,700	1,700	17,000
E13	Ingerson Ave	Third St to Arelious Walk Drive	19	N	Y	N	N	18,700	80	800	300	3,000

Table 1-2. BTI Project Segments Summary: Characteristics and Operating Conditions

BTI Project Segment	Segment		Study Intersection s Along Segment ^{1a}	Deficient Roadway ^{1b} (Y/N)	Non-Motorized Transportation Facilities Present?			Road Way Capacity ⁵ (ADT)	Existing Conditions		2035 No Build	
	Street	Extent			Side-walks ² (Y/N)	Cross-walks ³ (Y/N)	Bicycle Lanes ⁴ (Y/N)		PM Peak Hour Volumes ⁶	ADT ⁷ (est.)	PM Peak Hour Volumes ⁸	ADT (est.)
E14	Gilman Ave	Third St to Arelious Walk Drive	18, 32	Y	Y	Y	N	28,900	430	4,300	2,200	22,000
E15	Arelious Walker Dr	Gilman Ave to Egbert Ave	32	Y	N	N	Y	28,900	x	x	2,000	20,000
F1	Harney Way	Jamestown Ave to Executive Park East	33, 34	Y	Y	N	N	28,900	150	1,500	3,100	31,000
F2	Harney Way	Thomas Mellon Cir	34, 35	Y	Y	N	N	28,900	120	1,200	3,500	35,000
F3	Alana Way	Beatty Rd to Alana Way	35, 36	Y	N	N	N	--	--	--	5,200	52,000
G1	25th St	Pennsylvania Ave to Third St	2	Y	Y	N	N	18,700	240	2,400	1,100	11,000
G2	25th St	Third St to Illinois St	2, 3	N	N	Y	N	18,700	70	700	700	7,000
G3	Illinois St	25th St to Cesar Chavez St	3, 7	N	Y	N	N	28,900	90	900	800	8,000
G4	Cesar Chavez St	US 101 to Pennsylvania Ave	4, 5	Y	Y	Y	N	28,900	2,000	20,000	2,900	29,000
G5	Cesar Chavez St	Pennsylvania Ave to Third St	5, 6	N	Y	Y	N	28,900	1,200	12,000	2,600	26,000
G6	Cesar Chavez St	Third St to Illinois St	6, 7	N	Y	Y	N	18,700	250	2,500	1,300	13,000
G7	Illinois St	Cesar Chavez St to Marin St	7	Y	Y	N	N	28,900	140	1,400	800	8,000
G8	Illinois St	Marin St to Amador St/Cargo Way	10	N	N	N	N	18,700	380	3,800	1,500	15,000
G9	Evans Ave	Cesar Chavez St to Third St	4, 8, 11	Y	Y	Y	Y	28,900	1,200	12,000	2,500	25,000
G10	Evans Ave	Third St to Newhall St	11	N	Y	Y	Y	37,400	880	8,800	3,000	30,000
G11	Evans Ave	Newhall St to Keith St	11	N	Y	Y	Y	37,400	--	--	--	--
G12	Evans Ave	Keith St to Jennings St	22	N	Y	N	N	37,400	170	1,700	2,800	28,000

Table 1-2. BTI Project Segments Summary: Characteristics and Operating Conditions

BTI Project Segment	Segment		Study Intersection Segment ^{1a}	Deficient Roadway ^{1b} (Y/N)	Non-Motorized Transportation Facilities Present? ²			Road Way Capacity ³ (ADT)	Existing Conditions		2035 No Build	
	Street	Extent			Side-walks ² (Y/N)	Cross-walks ³ (Y/N)	Bicycle Lanes ⁴ (Y/N)		PM Peak Hour Volumes ⁶	ADT ⁷ (est.)	PM Peak Hour Volumes ⁸	ADT (est.)

Notes:

^{1a} The Study Intersections Along Segment corresponds to the intersections listed in Table 1-3 through Table 1-6 of this Chapter.^{1b} Deficient roadway can take on various meanings, such as observations of alligator cracks, bleeding, blow-up, corrugations, cracking, disintegration, rutting, in the case of Carroll Avenue, embedded rail lines, a legacy of manufacturing in the area; and in the case of several segments, such as Crisp Avenue or streets internal to Candlestick Point or HPS, lack of pavement (unimproved dirt road) or streets that do not exist. Determination of deficiency is based on review of City of San Francisco Pavement Management and Mapping System (PMMS) that tracks roadway conditions on existing City streets every two years (the PMMS was reviewed in 2010), aerial images from 2007, site visits, and engineering judgment (Yu, Charles, personal communication 2012). Refer to "Guide to the Investigation and Remediation of Distress in Flexible Pavements," (Cook et al. 2003).² Segments are marked Y, for Yes, where sidewalks are visible on a majority of blocks in the segment, based on review of aerial images from 2007, when the majority of existing conditions data was collected. The majority of these sidewalks are not built to current San Francisco street standards as described in the 2010 *San Francisco Better Streets Plan*. Segments are marked N, for No, where sidewalks are not visible, or the road segment does not yet exist.³ Segments are marked Y, for Yes, where crosswalks are visible on a majority of blocks in the segment, based on observations of aerial images from 2007, when the majority of existing conditions data was collected. Segments are marked N, for No, where crosswalks are not visible, or the road segment does not yet exist.⁴ Segments are marked Y, for Yes, where bicycle facility pavement markings, including Class II (dedicated bicycle lane), and III (shared road, marked with sharrows), are visible on a majority of blocks in the segment, based on observations of aerial images from 2007, when the majority of existing conditions data was collected. The dimensions of these observed facilities were not compared to current guidance for bicycle facility design or cross checked with the San Francisco Municipal Transportation Agency's 2009 *San Francisco Bicycle Plan*. Segments are marked N, for no, where bicycle facilities are not visible, or the road segment does not yet exist.⁵ Roadway Capacity estimate is calculated for the number of lanes based on visible pavement markings or general road width for the majority of blocks in the segment, based on observations of aerial images from 2007 and capacity thresholds based on Highway Capacity Manual (HCM) 2000 methodology.⁶ Existing Conditions PM Peak Hour volumes are based on weekday PM peak hour traffic count data, the majority of which was collected in 2007.⁷ Average Daily Traffic, or ADT, is an estimate of the total volume of vehicle traffic for a day, calculated as ten times the PM Peak Hour Volume for Existing Conditions, a standard factor for defining the relationship between PM peak hour traffic volumes and daily traffic volumes.⁸ 2035 No Build PM Peak Hour Volumes are based on forecasts prepared for the CP-HPS EIR, and used for the BTI Project Transportation Impact Study (Fehr & Peers 2012).

Segment characteristics marked with an "x" indicate that this segment does not yet exist. Segments that are highlighted have estimated ADTs in excess of state capacity.

Segment characteristics marked with "--" indicate that there are no data points for this segment or observations were inconclusive.

Source: Fehr & Peers 2012

Capacity, Transportation Demand, and Safety

The existing weekday daily vehicle, bicycle, and pedestrian trips in the BTI Project area are approximately 45,000, 1,500, and 18,000, respectively. The CP-HPS Plan, when fully constructed, would add approximately 78,000 daily vehicle trips to the BTI Project area. Additionally, it would add approximately 4,700 and 62,000 daily bicycle and pedestrian trips to the BTI Project area, respectively (Fehr & Peers 2010). The BTI Project roadway segments (refer to Table 1-2) are not configured to accommodate future 2035 vehicular demand in several segments (Segments B11, F1, F2, F3, G4, as shown in Figure 1-3), and in some cases these segments do not yet exist (Segments D1, D2, D3, E1, E5-E11, as shown in Figure 1-3). Similarly, pedestrian and bicycle facilities along the BTI Project routes are discontinuous or do not yet exist, limiting safe non-motorized travel options (refer to the 2012 Fehr & Peers Transportation Impact Study [TIS] for BTI Project cross sections).

As shown in Table 1-3, roadway operating conditions, using study intersection levels of service (LOS) as a proxy, are adequate (LOS A–D) in the existing and 2016 No Build scenarios. However, in the 2035 No Build scenario, which includes the development of the CP-HPS Plan and several nearby mixed-use developments (e.g., Executive Park, Visitation Valley, and Hunters View, refer to 2012 Fehr & Peers TIS, Table 17), roadway operating conditions, and thus levels of congestion, are forecast to substantially increase (e.g., approximately 85% of study intersections are forecast to operate at LOS E or F). This increase in congestion would affect existing residents, businesses, and travelers moving through the BTI Project area.

Furthermore, as discussed above under *Roadway Deficiencies*, the lack of roadway signage and street striping, and unmarked or unsignalized crossings make pedestrian and bicycle routes unclear (and therefore unsafe).

Modal Interrelationships and System Linkages

LOCAL AND REGIONAL TRANSIT

There are only two San Francisco Municipal Railway (Muni) bus lines that serve the areas where robust amounts of development are planned by the CP-HPS Plan. Candlestick Point is served by the 29-Sunset and HPS is served by the 19-Polk. The 24-Divisadero and 44-O'Shaughnessy bus lines enter the BTI Project area but do not directly connect to employment centers or regional transit hubs in San Francisco or the Peninsula. The 23-Monterey and 54-Felton bus lines enter the BTI Project area and connect to regional transit hubs but do not directly connect to employment centers in San Francisco or the Peninsula. The Third Street Light Rail (T Third Metro line) line passes through the BTI Project area, and connects to downtown San Francisco, but a transfer is required on the aforementioned bus lines. The T Third Street Metro line replaced the now defunct 15-Third Street bus line, and provides service between Fourth/King Station in the South of Market area of San Francisco to the Bayshore Boulevard/Sunnydale Avenue Station (19 total stations along Third Street). This line operates in exclusive right-of-way (ROW) except in the Bayview business district, where it operates in mixed flow with other cars and has transit signal priority to reduce the number of stops between stations (refer to Figure 1-2a for bus/rail transfer points). The Third Street Light Rail does not extend to Caltrain's Bayshore Station.

Regional transit offerings to the BTI Project area via local service include Caltrain, Bay Area Rapid Transit (BART), Alameda Contra Costa Transit (AC Transit) and ferries, San Mateo County Transit District (SamTrans), and Golden Gate Transit buses and ferries. The Bayshore Station (on Tunnel Avenue) is the only Caltrain Station in the BTI Project area. No local transit



NOTE: Prior to the completion of Segment E, BRT service will follow an interim route of Harney Way, Hunters Point Expressway, Gilman Ave, Arelious Walker Drive, to Carroll Ave.

The roadway network shown within the Hunters Point Shipyard south of Cnsp Road represents one of several alternatives under the CP-HPS Transportation Plan. Additional alternatives can be found in the CP-HPS Transportation Plan.

Figure 1-3
Construction Phasing and Segment Map

service connects the surrounding neighborhoods directly to the Bayshore Station, which is served by trains running on an hourly basis during peak periods. Access to the Bayshore Station is severely constrained by the lack of a comprehensive and connective roadway and sidewalk network. An average of only 171 weekday boardings was recorded at the Bayshore Station in 2007 (Fehr & Peers 2010). Planned developments, including the CP-HPS Plan, would have inconvenient and infrequent access to bus service and limited pedestrian and bicycle access to the existing Bayshore Station (Fehr & Peers 2010). Balboa Park is the closest BART station, located more than 3 miles west of the BTI Project area at the intersection of Geneva Avenue and I-280.

The CP-HPS Transportation Plan predicted that 18% of the daily external trips (trips to or from the CP-HPS Plan area as compared to trips entirely within the BTI Project area) would be made via transit. If transit was not expanded and extended into the BTI Project area, as many as 17,500 additional daily vehicle trips could result. This 22% increase in vehicular traffic would stress the existing and planned future roadway system, exacerbating traffic conditions at most intersections in the BTI Project area (Fehr & Peers 2010).

PEDESTRIAN AND BICYCLE ACCESS

Pedestrian access throughout the BTI Project area is limited due to topographic constraints and minimal street network connectivity (i.e., discontinuous sidewalks and bicycle facilities, and roadway deficiencies as described in Table 1-2). Existing land uses in the BTI Project area include light industrial and warehouse uses, which are not conducive to pedestrian and bicycle activity. Currently, waterfront access is limited to a portion of the San Francisco Bay Trail (Bay Trail), including the Islais Creek Bridge, around India Basin, and in the Candlestick Point State Recreation Area (CPSRA) with future routes connecting through the HPS, around Yosemite Slough, and along the northeastern waterfront around Candlestick Park.

Currently, bicycle facilities within the BTI Project area include lanes and routes in the BTI Project area. Bicycle lanes are dedicated lanes on the roadway edge and bicycle routes provide shared ROW space with motor vehicles designated by signs and pavement markings (sharrows). Bicycle lanes along BTI Project segments include portions of Cesar Chavez Street, Illinois Street, Cargo Way, Evans Avenue, and Hunters Point Boulevard. Bicycle routes along BTI Project segments include Cesar Chavez Street, Evans Avenue, Innes Avenue, Palou Avenue, Carroll Avenue, Fitch Avenue, Hunters Point Expressway, Jamestown Avenue, Harney Way, Alana Way, and Beatty Street (San Francisco Bike Map & Walking Guide 2011). The existing bicycle lanes provide minimal access to Candlestick Point and HPS. A network of pedestrian and bicycle lanes is needed within the BTI Project area to encourage non-motorized travel and to make access to transit stops convenient. At full buildout, the CP-HPS Transportation Plan targets to raise bicycle and pedestrian behavior 3% and 4%, respectively (Fehr & Peers 2010).

Table 1-3. Intersection Level of Service (LOS)—Weekday PM Peak Hour Conditions

Intersection	Control ¹	Existing Conditions		2016 No Build Conditions		2035 No Build Conditions	
		Delay ^{2,3}	LOS	Delay ^{2,3}	LOS	Delay ⁴	LOS
1. 25th St/Pennsylvania Ave	AWSC	12	B	13	B	>80/1.42	F
2. Third St/25th St	Signal	16	B	18	B	>80/2.93	F
3. 25th St/Illinois St	AWSC	7	A	8	A	14	B
4. Cesar Chavez St/Evans Ave	Signal	21	C	22	C	>80/1.63	F
5. Cesar Chavez St/Penns Ave/I-280	Signal	39	D	39	D	>80/1.37	F
6. Third St/Cesar Chavez St	Signal	31	C	33	C	>80/1.76	F
7. Cesar Chavez St/Illinois St	Signal	19	B	21	C	23	C
8. Evans Ave/Napoleon St/Toland St	Signal	46	D	46	C	>80/1.85	F
9. Third St/Cargo Way	Signal	20	B	20	B	>80/1.74	F
10. Amador St/Cargo Way	Signal	12	B	17	B	59/1.04	E
11. Third St/Evans Ave	Signal	34	C	47	D	>80/1.76	F
12. Third St/Jerrold Ave	Signal	23	C	23	C	>80/0.89	F
13. Third St/Oakdale Ave	Signal	19	B	18	B	61/1.12	E
14. Third St/Palou Ave	Signal	27	C	61/0.57	E	>80/6.07	F
15. Third St/Revere Ave	Signal	31	C	31	C	>80/1.15	F
16. Third St/Williams Ave/Van Dyke Ave	Signal	22	C	22	C	>80/0.99	F
17. Third St/Carroll Ave	Signal	14	B	15	B	77/0.94	E
18. Third St/Paul Ave	Signal	24	C	28	C	>80/3.49	F
19. Third St/Ingerson Ave	Signal	5	A	5	A	44	D
20. Third St/Jamestown Ave	Signal	14	B	16	B	>80/6.65	F
21. Third St/Le Conte Ave/US-101 nb off	Signal	11	B	11	B	23	C
22. Evans Ave/Jennings St	AWSC	10	B	13	B	>80/1.91	F
23. Innes Ave/A. Walker Drive	SSSC	8.7(sb)	A	10.3(sb)	B	6	A
24. Innes Ave/Earl St	SSSC	8.6(sb)	A	9.0(sb)	A	19.5(sb)	C
25. Innes Ave/Donahue St	AWSC	7	A	18	B	>80/1.08	F
26. Crisp Ave/Palou Ave	SSSC	11.6(nb)	B	25	C	>80/1.17	D
27. Ingalls St/Palou Ave	AWSC	9	A	11	B	>50/1.57	F
28. Keith St/Palou Ave	AWSC	9	A	11	B	44/1.02	E
29. Ingalls St/Thomas Ave	SSSC	11.5(wb)	B	13.3(wb)	B	>50(wb)	F

Table 1-3. Intersection Level of Service (LOS)—Weekday PM Peak Hour Conditions

Intersection	Control ¹	Existing Conditions		2016 No Build Conditions		2035 No Build Conditions	
		Delay ^{2,3}	LOS	Delay ^{2,3}	LOS	Delay ⁴	LOS
30. Ingalls St/Carroll Ave	AWSC	8	A	9	A	>50/1.84	F
31. Ingalls St/Egbert Ave	AWSC	8	A	8	A	<10	A
32. A. Walker Dr/Gilman Ave	SSSC	9.2(sb)	A	14.2(eb)	B	64/1.00 ⁴	E
33. Harney Way/Jamestown Ave	AWSC	8	A	9	A	62/1.14 ⁴	E
34. Harney Way/Executive Park East	SSSC	3.5 (sb)	A	10.8(wb)	B	>80/1.34 ⁴	F
35. Alana Way/Harney Way/Thomas Mellon Cir ⁵	AWSC	8	A	10 ⁴	B	>80/1.41 ⁴	F
36. Alana Way/Beatty Ave ⁵	AWSC	9	A	11	B	>80/3.89	F
37. Harney Way/US 101 nb Ramps ⁵	Signal	--	--	--	--	>80/1.74	F

Notes:

¹ SSSC= Side-Street Stop Control; AWSC=All-way Stop Control; Signal=Signalized² Delay presented in seconds per vehicle. Intersections operating at LOS E or LOS F conditions highlighted in **bold**.³ STOP-controlled intersection delay and LOS presented for worst approach. Worst approach indicated in ().⁴ V/C ratio shown for intersections that operate at LOS E or F.⁵ Intersection analysis for 2035 No Build and Build scenarios assumes that the US 101 Geneva/Harney interchange, which is being planned and proposed as part of a separate project, is in place (refer to Figure 1-4).

Source: Fehr & Peers 2010.

1.3.2.2 SOCIAL DEMANDS AND ECONOMIC DEVELOPMENT

The BTI Project area has one of the highest concentrations of very low-income residents and one of the highest unemployment rates in San Francisco. The 2010 Census records 19.5% of BTI Project area residents as being below poverty level compared to 11.5% for all of San Francisco and an unemployment rate 13.2% for the BTI Project area compared to 6.6% for all of San Francisco (U.S. Census 2010). The area has few public parks and open spaces, and is underserved by transit and basic neighborhood-serving retail and cultural amenities (BVHP Redevelopment Plan 2010). A study and calculator developed in 2009 by the Urban Land Institute and the Center for Neighborhood Technology found that transportation costs in this area of San Francisco (identified by zip code 94124) are approximately \$2,000 greater annually per household than the rest of the City and the combined housing plus transportation burden (as a percentage of total income) is more than double when compared to City as a whole (Urban Land Institute 2009).⁵

1.3.2.3 LEGISLATION

Development in the BTI Project area is guided by the CP-HPS Plan and Bayview Hunters Point Redevelopment Plan (San Francisco Redevelopment Agency 2010a, 2010b). These plans support business development, economic expansion, and residential development. In May 2007, the Board of Supervisors and the Mayor approved a resolution endorsing a “Conceptual Framework” for integrating the redevelopment of the HPS with plans for Candlestick Point. Building on the Conceptual Framework, San Francisco voters approved the “Bayview Jobs, Parks and Housing Initiative” (Proposition G) in June 2008, which includes the Candlestick Point and HPS area. Proposition G outlined the goals and principles upon which the City may move forward with redevelopment of the integrated area, including the CP-HPS Plan to provide automobile, public transportation, and pedestrian and bicycle connections between the HPS and Candlestick Point to facilitate the integration of the BTI Project site and reunification with the Bayview Hunters Point area.

In June 2010, the San Francisco Redevelopment Agency (SFRA)⁶ Redevelopment Commission authorized the Executive Director to execute a Disposition and Development Agreement (DDA [including the CP-HPS Transportation Plan]) between CP Development Co., LP (the project sponsor for the CP-HPS Phase II Redevelopment Plan) and the SFRA. In August 2010, the Board of Supervisors adopted Redevelopment Plan Amendments, General Plan Amendments, amendments to the Planning Code, Zoning Map and others to necessary for CP-HPS Plan implementation.

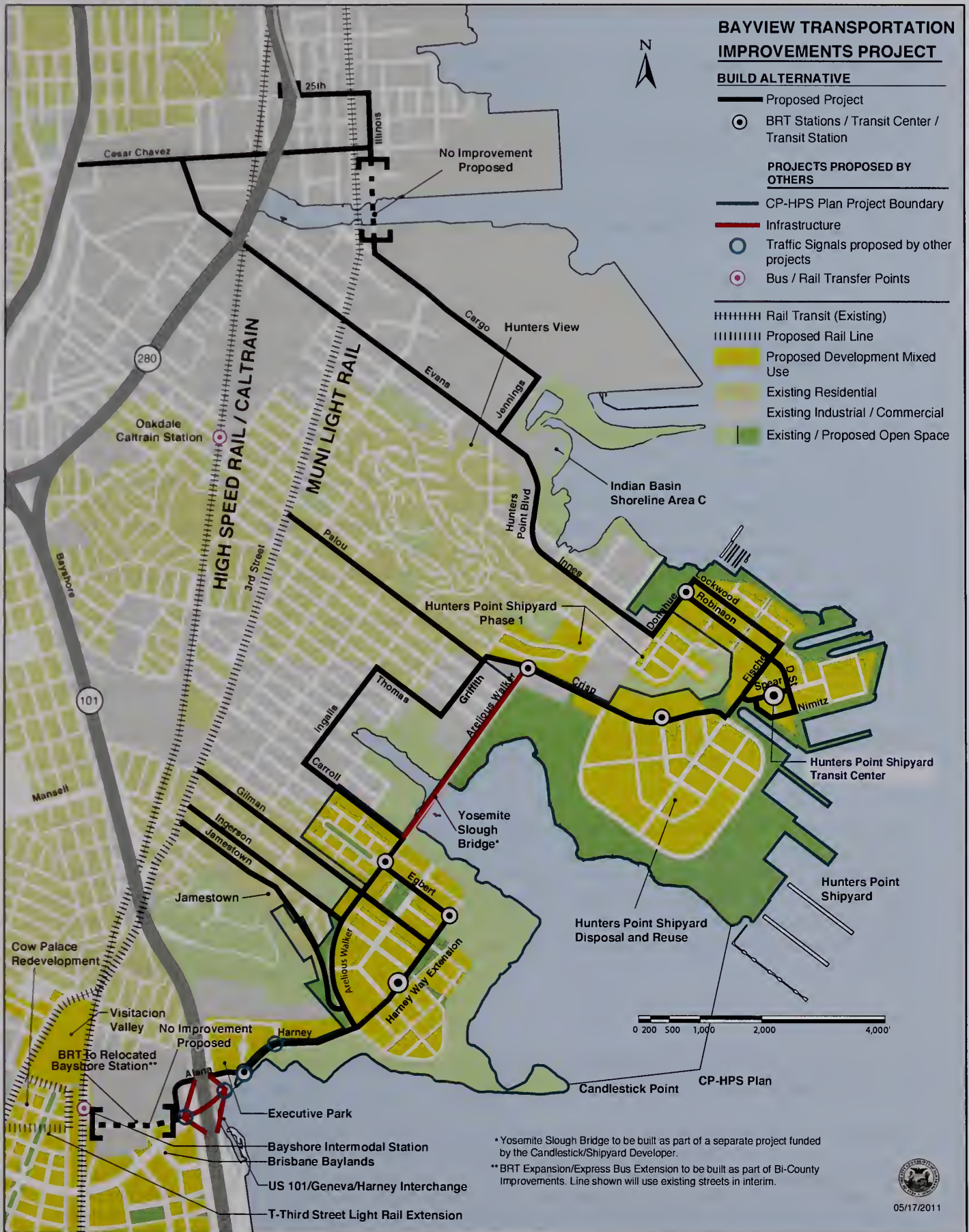
1.3.3 INDEPENDENT UTILITY AND LOGICAL TERMINI

1.3.3.1 INDEPENDENT UTILITY

The BTI Project provides roadway and multimodal transportation improvements as a stand-alone project. However, as shown on Figure 1-4, the BTI Project improvements are related to other independently planned transportation projects in the Project area including:

⁵ The Terwilliger Cost Calculator is the housing + transportation calculator available at <http://www.bayareaburden.org>.

⁶ Per Resolution No. 11-12, approved by San Francisco Mayor Edwin Lee on January 26 2012, the City and County of San Francisco is the Successor to the Redevelopment Agency. The Successor to the Redevelopment Agency is referred to in this document as the Office of Community Investment and Infrastructure.



NOTE: The CP-HPS Project includes a proposed stadium for the San Francisco 49ers football team on the Hunters Point Shipyard. The City of San Francisco is required to keep an option open to the 49ers for a new stadium on Hunters Point Shipyard until January 2015. On December 2012 the Santa Clara City Council approved the Final Development Budget, Final Financing Plan, and lease for a stadium in Santa Clara. If the 49ers confirm that they wish to terminate the stadium option at Hunters Point Shipyard, the circulation, access and roadway cross-sections described within the BTL project description would basically remain the same, though game-day specific infrastructure such as overhead signage and reversible lanes would not be constructed.

The roadway network shown within the Hunters Point Shipyard south of Crisp Road represents one of several alternatives under the CP-HPS Redevelopment Plan. Additional alternatives can be found in the CP-HPS Redevelopment Plan.

**Figure 1-4
Other Projects**



05/17/2011

- The US 101/Geneva/Harney Way interchange project (i.e., the redesign of the interchange located at the western end of the BTI Project area);
- Provision of a local street grid envisioned in Candlestick Point and the HPS (which is undergoing Comprehensive Environmental Response Compensation and Liability Act [CERCLA] remediation by the US Navy), as described in the CP-HPS Transportation Plan;⁷
- A limited-use bridge (i.e., vehicular traffic would be limited to game days, otherwise transit, bicycle, and pedestrian-use only) over Yosemite Slough proposed for construction as part of the CP-HPS Plan Alternative 3, and;
- Relocation of the Caltrain Bayshore Station and extension of the T-Third Street Light Rail to create a transit hub consistent with proposed redevelopment plans.

BTI Project's proposed Harney Way widening would continue to use Alana Way for bus rapid transit (BRT) routing through the interchange, and Harney Way roadway improvements would conform to existing interchange geometry if no interchange improvements are implemented.

BTI Project roadway improvements presume demolition of the existing Candlestick Park stadium and development of the CP-HPS street grid; they provide convenient connections to new envisaged grid yet upgrade the existing roadway network independently and provide an effective transit route even if the stadium were never demolished.⁸ If the 49ers confirm that they wish to terminate the stadium option at HPS, the BTI Project's proposed circulation, access and roadway cross-sections would basically remain the same, although game-day specific infrastructure (e.g., overhead signage and reversible lanes) would not be constructed. Thus, the BTI Project could move forward without implementation of the remainder of the CP-HPS Plan. Similarly, absent of the BTI Project, the CP-HPS Plan could move forward. The Year 2035 No Build condition in the BTI Project TIS analyzed this scenario and shows that although there would be different traffic operation conditions in the BTI Project area, redevelopment would not be dependent on BTI Project improvements.

In progress CERCLA remediation at HPS is phased to ensure that parcels used for BTI Project construction within HPS will be remediated prior to BTI Project construction. The remediation is the only part of CP-HPS work that is underway.⁹

The BTI Project roadway infrastructure improvements provide a comparable level of transit service to a road network that includes the CP-HPS Transportation Plan's proposed Yosemite Slough Bridge. Neither the Yosemite Slough Bridge nor any other additional infrastructure improvements are anticipated to be required beyond what is proposed to allow the San Francisco Municipal Transportation Agency (SFMTA) to run a basic and serviceable level of transit service on BTI Project facilities that will meet projected demand (San Francisco Municipal Transportation Agency 2012).¹⁰

⁷ Should the stadium not be removed, Design Option B (discussed under Section 1.4.1.8) has been considered.

⁸ Refer to Design Option B, described in Section 1.4.1.8 *Design Option B* of this chapter which includes a BRT/vehicular extension should the stadium not be demolished.

⁹ This refers to CP-HPS Phase I Redevelopment Project. As indicated in the Summary under Section S.1 Overview, references in this document to CP-HPS refers to CP-HPS Phase II Redevelopment Project.

¹⁰ The CP-HPS Transportation Plan (approved June 3, 2010) presents the goals, principles, and strategies to meet the travel demand needs of the mixed-use, urban neighborhood in southeast San Francisco (the CP-HPS Plan). Roadway and transit improvements included in this plan include access improvements from US-101/Harney Way to Candlestick Point, US-101/Cesar Chavez Street to Hunters Point Boulevard, a new Yosemite Slough Bridge to

As the Project proposes no physical improvements west of the Harney Way interchange, the improvements in the Bi-County Transportation Study,¹¹ including potential relocation of Bayshore Station and the T-Third Street Light Rail extension, while complemented by transportation improvements included in the BTI Project and designed with compatibility in mind, will not affect the scope of the BTI Project. The BTI Project and the improvements proposed Bi-County Transportation Study serve different purposes and needs.

1.3.3.2 LOGICAL TERMINI

The termini for the BTI Project are shown on Figure 1-2a. US 101 and I-280 are rational endpoints for transportation improvements because they provide regional vehicular access into the BTI Project area from the San Francisco peninsula to the south, and downtown San Francisco to the north in accordance with the Project's purpose. US 101 and I-280 are the major roadways that generally define the physical boundaries of the Project area and are logical limits for environmental analysis. The Bayshore Caltrain station is a rational endpoint because it is a point of transfer between mode types (i.e., roadway/bicycle/pedestrian to train). Finally, the location of the Hunters Point Transit Center (Transit Center) is a rational endpoint because it is the beginning and end for proposed transit routes (e.g., extension of the 24-Divisadero, 44-O-Shaughnessy, 48-Quintara-24th Street and the new Hunters Point Express [HPX]), as identified in the CP-HPS Plan and is proposed to be a major transfer location and employment/residential destination center in the future.

1.4 PROJECT DESCRIPTION

The BTI Project area is located in the Southeast Community (refer to Figures 1-2a and 1-2b). This area has also historically been described as "South Bayshore." The purpose of the BTI Project is to improve traffic operations within the BTI Project area to accommodate approved planned growth, develop a more direct access route from US 101 and I-280 to the Candlestick Point and HPS areas, and to provide multimodal access to the BTI Project area linking it to the rest of San Francisco and the Bay Area region. The existing transportation system of discontinuous roadways and limited transit services underserves the existing residents. The BTI Project is needed to ensure that the planned development in the area will not overwhelm the existing constrained transportation network in the Southeast Community. Without the BTI Project, future increased transportation demand using the existing deficient roadway network will likely create localized congestion, disproportionately effecting existing residents and businesses, and will fail to adequately serve the planned developments.

1.4.1 BUILD ALTERNATIVE

The following is a description of the proposed Build Alternative improvements which includes the BTI Project route, roadway improvements, traffic signal improvements, transit improvements (including the Transit Center), bicycle and pedestrian improvements, and interim conditions (land acquisitions are shown in Table 2.1.3.3 in Section 2.1.3, *Community Impacts*). In general, the BTI Project would address roadway deficiencies and include improvements to existing streets along the Project route (illustrated in Figure 1-2a and 1-2b) and construct new streets consistent with planning in areas where public roadways do not yet exist. Further detail on

provide BRT, pedestrian/bicycle, and game day-only auto connection between HPS and Candlestick Point, various location specific improvements, illustrated on Figure 1 of the Executive Summary.

¹¹ The Bi-County Transportation Study is led by the San Francisco County Transportation Authority in partnership with several agencies from both sides of the San Francisco/San Mateo County line.

existing conditions can be found in the Visual Impact Data Report (Appendix B to the Visual Impact Assessment, City and County of San Francisco 2013) and the Traffic Impact Study (Fehr and Peers 2012). The BTI Project is estimated to cost between \$300 million and \$400 million.

Key features of the Build Alternative include:

- A new roadway at Arelious Walker Drive Extension (three lanes for vehicles in each direction) replacing the current Giants Drive.
- The creation of Harney Way Extension across the demolished Candlestick Stadium parking lot and overflow parking area and the creation of Egbert Avenue in the overflow parking area. These roads will have one vehicular lane in each direction.
- The replacement of existing Navy roads within Hunters Point Shipyard with public roadways at Crisp Avenue and Donahue Street with two lanes for vehicles in each direction¹², and at, Lockwood Street, Robinson Street, Fischer Street, D Street, Spear Street and Nimitz Street with one lane for vehicles in each direction.
- Additional vehicular lanes on Griffiths Street, Ingalls Street, Thomas Avenue, Harney Way (northbound turn lane only) and 25th Street (peak travel lanes).
- Changing the current non-uniform configurations of Arelious Walker Drive, Carroll Avenue and Jamestown Avenue to uniformly have two vehicular lanes in each direction.
- Reducing vehicular lanes on Gilman Avenue from multiple lanes in each direction (at different locations) to one dedicated lane in each direction throughout.
- BRT-only lanes on Alana Way, Harney Way, Arelious Walker Drive, Egbert Avenue, Crisp Avenue, D Street, Spear Street and Nimitz Avenue and Transit-only lanes on Palou Avenue and Gilman Avenue.
- A New Transit Center at Spear Avenue in Hunters Point, a Transit Station on Harney Way Extension, and BRT Stations throughout the Project area.
- Minor ROW sliver acquisitions at 8 locations without affecting buildings or requiring property relocations.
- Intersection improvements throughout the Project area including new left-turn pockets on Illinois Street (Cesar Chavez and 25th Street) and new and improved traffic signals throughout.
- 255 tree removals, predominantly along Harney Way, Palou Avenue and Gilman Avenue, with replacement planting and landscaping. Retaining walls along Harney Way and Arelious Drive Extension.
- New sidewalks, bicycle lanes, traffic medians and a net increase in parking.

All improvements described below are planned to be in place before 2030¹³ (refer to Figure 1-3).

¹² Donahue Avenue would contain only one vehicular lane in each direction between Robinson Street and Lockwood Street. Crisp Avenue would contain a center turn lane south of Arelious Walker Drive.

¹³ BTI Project implementation would be coordinated with other projects in the BTI Project area, including release of the HPS parcels by the Navy to the City. No early release of parcels would occur prior to completion of remediation activities.

1.4.1.1 PROJECT ROUTE

From the north (refer to Figure 1-2a), the proposed BTI Project Build Alternative utilizes both Evans Avenue and Cargo Way from US 101 and Cesar Chavez Street, and I-280 at 25th Street into the HPS, through the north gate. This route uses both Evans Avenue and Illinois Street/Cargo Way, intersecting into a single alignment at Evans Avenue and Jennings Street. This route then follows along Hunters Point Boulevard, along Innes Avenue onto streets internal to the HPS (including Donahue Street, parallel streets Lockwood and Robinson, as well as Fischer, Spear, D, and Nimitz streets), connecting to the Transit Center.

From the south, the proposed BTI Project Build Alternative begins at the US 101/Harney Way off-ramp and continues east to the Crisp Road gate (south gate) into the HPS. Traveling north on Harney Way to a new intersection at Harney Way and Giants Drive (future Arelious Walker Drive Extension), the route bifurcates into two alignments northwards onto Arelious Walker Drive and northeast onto the Harney Way extension (including a Transit Station/wedge landscape area). The two alignments rejoin at the intersection of Egbert Avenue and Arelious Walker Drive, turning left onto Carroll Avenue, right onto Ingalls Street, right onto Thomas Avenue, and left onto Griffith Street before connecting to Crisp Road to the east (through the south gate) and entering the HPS and connecting to the Transit Center.

Secondary access/circulation includes Palou Avenue between Third Street and Griffith Street, and Gilman, Ingerson, and Jamestown avenues, between Third Street and Arelious Walker Drive.

Seen as a whole, the BTI Project is a network of roadway and multimodal transportation facility improvements providing access to/from transit hubs and continuous access through the BTI Project area between US 101 and I-280. Table 1-4 through Table 1-6 provide a comprehensive summary of proposed improvements presented by roadway segments, and broken down into northern roadways, southern roadways, and secondary access routes.

1.4.1.2 ROADWAY IMPROVEMENTS

The Build Alternative includes rehabilitation and reconfiguration of ROWs (e.g., widening of existing roadways to accommodate BRT lanes and construction of new roadways that include BRT/multimodal improvements) to accommodate increased demand, enhance safety for drivers, pedestrians, and bicyclists, and create a continuous non-motorized network. To accommodate the reconfigured ROWs, roadway improvements also include construction of three retaining walls (two along Arelious Walker Extension and one along Harney Way) and a cantilever on the south side of the Cesar Chavez Street. In addition, there would be enhanced signalization, vehicular and bicycle lane striping/restriping and signage, addition of through lanes and lane reconfiguration, tree removal, landscaping, lighting, utility excavation and/or relocation/connection (including but not limited to electrical, combined sewer, gas, and telecommunications), traffic medians, signals, and retaining walls. Other traffic improvements include traffic calming features (e.g., bulbouts) and new American with Disabilities Act (ADA) compliant curb ramps, as well as roadway geometry (e.g., improvements to turning radii, sight distance, areas of conflict) and addition of new traffic signals (refer to Section 1.4.1.3, *Traffic Signal Improvements*).

Roadway improvements are organized by northern, southern, and secondary access routes, and are illustrated in Figure 1-2a. They are further organized into *Vehicular Arterial Improvements* and *Neighborhood Street Improvements*. *Vehicular Arterial Improvements* include streets that connect to regional destinations (e.g., US 101, I-280) or streets that form the “vehicular spine” of or connect to future developments at Candlestick Point and HPS

(representative cross sections are illustrated in Figure 1-2b). *Neighborhood street improvements* include those that connect future developments at Candlestick Point and HPS to Third Street and Cesar Chavez, but are designed and forecast to carry less auto traffic than vehicular arterial streets.

1.4.1.3 TRAFFIC SIGNAL IMPROVEMENTS

To further promote traffic operation and address potential traffic conflicts as a result of future development, new traffic signals would be installed at several locations in the BTI Project area. Proposed traffic signals improvements included in the BTI Project are illustrated in Figure 1-2a. The proposed list of traffic signals is also provided in the TIS (Fehr & Peers 2012). The final placement and timing of installation will be confirmed prior to construction.

Table 1-4. Northern Roadway Improvements

BTI Project Segment/ Street Name	Formalize & Upgrade ROW ¹	Repair/Repave Existing Street ²	Widen Existing ROW ²	New Sidewalks ^{1,2}	Widen Sidewalks ²	Narrow Sidewalks ²	Sidewalk Repair where Necessary ²	Curb Ramps where Necessary ^{1,2}	Bus Bulbouts ^{1,2}	Tree Removal ²	New Street Trees ^{1,2}	Infill Street Trees ²	New Lighting ^{1,2}	Infill Lighting ²	Utility Excavation or Relocation ^{1,2}	Traffic Median ^{1,2}	Transit Only Lane ^{1,2}	BRT Lane ^{1,2}	BRT Median ^{1,2}	Bicycle Lane ^{1,2}	Retaining Wall ¹
G4/G5/G6 Cesar Chavez St ³		X	X	X			X	X				X		X						X	
G9, G10, G11, G12 Evans Ave		X	X	X			X	X				X		X		X				X	
G1, G2 25th St		X		X			X	X				X		X							
G7 Illinois St		X					X	X				X		X							
G3 Illinois St		X					X	X				X		X						X	
G8 Illinois St																					
A1 Cargo Way		X					X	X				X		X		X				X	
A2 Jennings St		X					X	X				X		X							
B1 Hunters Point Blvd		X					X	X				X		X						X	
B2 Innes Ave		X		X			X	X				X		X						X	
B2 Donahue St	X			X				X			X		X		X					X	
B3, B4 Robinson St	X			X				X			X		X		X	X				X	
B5, B6 Lockwood St	X			X				X			X		X		X					X	
B7, B8. Fischer St	X			X				X			X		X		X					X	
B9, B10, B11 Crisp Ave	X			X				X	X		X		X		X			X			

Note: Additional information regarding the existing conditions and proposed project features of the new and existing roadways can be found in Appendix B (Visual Assessment Data Report) of the Visual Impact Assessment.

¹ Indicates improvements to new streets.

² Indicates improvements to existing streets.

³ A bicycle path via a cantilevered trail on the south side of the viaduct that connects Cesar Chavez and Evans Avenue would be added to the existing auto/truck lane configuration.

Source: City and County of San Francisco 2011

Table 1-5. Southern Roadway Improvements

BTI Project Segment/Street Name	Formalize & Upgrade ROW ¹	Repair/Repave Existing Street ²	Widen Existing ROW ²	New Sidewalks ^{1, 2}	Widen Sidewalks ²	Narrow Sidewalks ²	Sidewalk Repair where Necessary ²	Curb Ramps where Necessary ^{1, 2}	Bus Bulbouts ^{1, 2}	Tree Removal ²	New Street Trees ^{1, 2}	Infill Street Trees ²	New Lighting ^{1, 2}	Infill Lighting ²	Utility Excavation or Relocation ^{1, 2}	Traffic Median ^{1, 2}	Transit Only Lane ^{1, 2}	BRT Lane ^{1, 2}	BRT Median ^{1, 2}	Bicycle Lane ^{1, 2}	Retaining Wall ^{1, 3}
F1, F2 Harney Way		X	X	X			X	X		X	X		X	X	X			X	X		X
F3 Alana Way				X														X			
Hunters Point Expressway ⁴																		X	X		
E1, E2 Arellio Walker Extension	X			X				X	X		X		X			X				X	X
E3, E4 Gilman Ave		X	X	X				X		X	X		X		X					X	
E5, E6 Harney Way Extension	X			X				X		X	X		X		X	X		X			
E7, Harney Way Extension	X			X				X			X		X		X	X		X		X	
E8, E9 Harney Way Extension	X			X				X			X		X		X			X		X	
E15, C7 Arellio Walker Dr	X		X	X				X	X		X		X		X	X		X	X	X	
E10, E11 Egbert Ave	X			X				X			X		X					X			
E14 Gilman Ave	X			X				X			X		X							X	
C4, C5, C6 Carroll Ave		X		X			X	X			X	X	X	X	X						
C3 Ingalls St		X			X	X	X	X		X	X	X		X	X						
C2 Thomas Ave		X				X	X	X		X	X	X	X	X	X						
C1 Griffith St		X					X	X				X		X	X						
E12 Jamestown Ave	X			X				X		X	X	X	X	X	X						X
D1 D St	X			X				X			X		X		X					X	
D2 D St, Nimitz St	X			X				X	X		X		X		X			X		X	
D3 Spear St	X			X				X	X		X		X		X			X			

Note: Additional information regarding the existing conditions and proposed project features of the new and existing roadways can be found in Appendix B (Visual Assessment Data Report) of the Visual Impact Assessment.

1. Indicates improvements to new streets.

2. Indicates improvements to existing streets.

3. Three retaining walls are proposed: a retaining wall on Harney Way between Executive Park Boulevard and Thomas Mellon Circle (6,000 feet long and up to 18 feet high); a stepped retaining wall on the west side of Arellio Walker Drive Extension (500 feet long and up to 53 feet tall); and a stepped retaining wall on the east side of the proposed Arellio Walker Drive Extension (1,250 feet long and up to 47 feet tall).

4. Hunters Point Expressway is an interim roadway condition and would be subsumed into planned BTI Project transportation infrastructure proposed to be in place by 2035.

Source: City and County of San Francisco 2011

Table 1-6. Secondary Access Route Improvements

BTI Project Segment/Street Name	Formalize & Upgrade ROW ¹	Repair/Repave Existing Street ²	Widen Existing ROW ²	New Sidewalks ^{1,2}	Widen Sidewalks ²	Narrow Sidewalks ²	Sidewalk Repair where Necessary ²	Curb Ramps where Necessary ^{1,2}	Bus Bulbouts ^{1,2}	Tree Removal ²	New Street Trees ^{1,2}	Infill Street Trees ²	New Lighting ^{1,2}	Infill Lighting ²	Utility Excavation or Relocation ^{1,2}	Traffic Median ^{1,2}	Transit Only Lane ^{1,2}	BRT Lane ^{1,2}	BRT Median ^{1,2}	Bicycle Lane ^{1,2}	Retaining Wall ¹
B12 Palou Ave		X				X	X	X	X	X	X	X	X	X	X		X				
E14 Gilman Ave		X				X	X	X	X	X	X	X	X	X	X						
E13 Ingerson Ave		X					X	X													
E12 Jamestown Ave		X		X			X	X			X	X	X	X	X						

Note: Additional information regarding the existing conditions and proposed project features of the new and existing roadways can be found in Appendix B (Visual Assessment Data Report) of the Visual Impact Assessment.

¹ Improvements limited to new streets only.

² Improvements limited to existing streets only.

Source: City and County of San Francisco 2011

1.4.1.4 TRANSIT IMPROVEMENTS

The BTI Project includes infrastructure improvements for transit with the addition of a new BRT line connecting the Balboa Park BART Station and the Bayshore Caltrain Station to the Candlestick Point and HPS redevelopment areas, two express bus lines connecting the future HPS and Candlestick Point Areas with downtown San Francisco, and roadway improvements to the Palou Avenue transit corridor.¹⁴ Transit specific changes including transit preferential street (TPS) improvements (physical changes related to traffic controls) would be made along Palou Avenue and the BRT route to improve the speed and reliability of transit services and complement the limited existing public transit services in the area to meet future needs.

Beginning in the south, the new BRT route would utilize the Geneva-to-Bayshore corridor of the existing Muni 8X /8AX transit routes beyond the BTI Project limits, and follow the general route of the Muni line 56 from Blanken Avenue to Tunnel Avenue to reach the intersection of Alana Way and Harney Way, traveling in mixed flow from the BART and Caltrain stations. The BRT service would be operated as an extension of the Muni 28L line, already proposed to extend along Geneva Avenue east of the Balboa Park BART Station, and is planned to be operated as a "short" line running between BART and the BTI Project as well as a "long" line extending along the current 28L west and north of BART, in order to provide the extra frequency where the greater demand between the BTI Project and BART is generated. The BRT buses are proposed

¹⁴ Although transit service would benefit from the transit-supportive elements of the BTI Project, namely the BRT lines proposed as part of the CP-HPS Plan, the Project itself does not propose to operate any transit service (Fehr & Peers 2012).

to be wireless, and would travel in exclusive lanes on Harney Way to Egbert Avenue and to the intersection of Arellous Walker Drive and Carroll Avenue. The BRT buses would continue on an express bus route (refer to Figure 1-2a) on Carroll Avenue, Ingalls Street, and Thomas Avenue, connecting with exclusive BRT lanes into the HPS, on Crisp Road to the Transit Center.¹⁵

The new HPS express bus would serve the Transit Center and provide a direct route to downtown San Francisco traveling in mixed flow on Innes Avenue to Cargo Way and to the I-280 interchange at 25th Street where it would continue downtown to the new Transbay Terminal. The Candlestick Point express bus would directly connect the Candlestick Point area to downtown San Francisco via the improved Harney Way and US 101. The *BRT/Express Bus Route Improvements* are illustrated in Figure 1-2a.

The proposed improvements to transit corridors (refer to BRT/Express Bus Route Improvements in Figure 1-2a) are essential for public transit to connect the Southeast Community with other existing transit corridors, such as the Third Street Light Rail, and would enhance cross-town transportation connections (Palou, Gilman, Ingerson, and Jamestown avenues) in the area with the rest of the City. These transit corridors would be physically improved with: enhanced signage and traffic controls; transit facility enhancements such as bulbouts, BRT median, and BRT lane; and bus shelters/transit station and center¹⁶ with NextBus real-time arrival predictions. Roadway and streetscape improvements would be made throughout and would include transit-only lanes, enhanced landscaping, ADA curb ramps and a potential new substation for power (located north of Crisp Avenue). Additionally, on Palou Avenue and within the HPS, there would be a new extension along Palou east from the terminal at Palou and Third of the existing 17- to 19-foot-high overhead contact system (OCS or catenary wires or trolley lines) for Muni trolley buses and signalization, and for interconnection of all intersections between Third Street and the new Transit Center.

Hunters Point Transit Center and Harney Way Extension Transit Station

A new Hunters Point Transit Center (refer to Figures 1-2a and 1-2b) would serve as a transfer terminus for transit lines and would be located within the block encompassed by Spear Avenue, Nimitz Avenue, and D Street. The new Transit Center would include bus bays, shelters, ticketing kiosks, and real-time transit information technology. Most of the bus lines serving the HPS would stop at the Transit Center allowing quick and immediate transfers to other lines.

The intention of the Transit Center is to consolidate the terminus of all transit lines in one location to allow for convenient transfers and bus layovers. It is located at the nexus of residential, retail, and research and development land uses (refer to Table 1-7).

In addition to the Hunters Point Transit Center, a Transit Station and adjacent wedge landscaped area would be located on the Harney Way Extension between Ingerson and Jamestown avenues. This new Transit Station would serve multiple transit lines and would include a shelter, ticketing kiosk, and real-time transit information technology.

¹⁵ “Shelters” are defined as transit stops that serve a single bus line and “stations” are defined as transit stops where multiple transit lines converge. Individual BRT stations, the Transit Station, and the Transit Center are illustrated in Figure 1-2a.

¹⁶ The BTI Project includes a Transit Station at the Harney Way Extension between Ingerson and Jamestown avenues (refer to Figure 1-2a).

Table 1-7. Transit Improvements

BTI Project Segment/ Street Name	Basic Roadway Features			Transit Features																
	BRT-interim Curb & Gutter	Basic Signal Installation or Upgrades	Lighting Signage Utility Upgrades	Landscaping Ped lighting/Crosswalk Upgrades	Class I Bikelane (out-of-street)	Class II Bikelane (painted lane)	Class III Bikelane (sharrow)	Bicycle Commuter Facilities (lane/signage)	Bus Bulbouts	Transit-only lane	BRT Median	BRT Greenway	BRT Station with Features	Transit Priority Signals and Support Utilities	Transit Shelter/Seating/Lighting	Trolleywires and Poles (overhead)	Trolleybus substation	Berth/Roadbed/Transit Plaza	Terminal Facilities/Operator Support	Transit Mgmt Center
B2 Innes Ave/Donahue Ave			X	X			X	X	X						X					
B1 Hunters Point Blvd/Innes Ave							X	X	X					X	X					
B2 Innes Ave/Donahue Ave			X			X			X	X				X	X					
B3 Robinson St (Donahue to A.4)			X			X		X	X					X	X					
B4 Robinson St (A.4 To Fischer)			X			X			X					X	X					
B5 Lockwood St (Donahue to A.6)		X	X																	
B6 Lockwood St (& Fischer)		X	X																	
B7 Fischer Ave (Robinson to Nimitz)			X			X														
B8 Fischer Ave			X		X				X	X	X	X		X	X	X				
B9 Crisp Ave			X		X			X	X	X	X	X	X	X	X	X	X			
B10 Crisp Ave			X		X			X	X	X	X	X	X	X	X	X				
B11 Crisp Ave	X	X	X		X				X	X				X	X	X				
B12 Palou Ave			X				X		X	X				X	X	X				
C6 Carroll Ave (Griffith to A. Walker)	X	X	X																	
C5 Carroll Ave (Hawes to Griffith)	X	X	X																	
C7 A. Walker Dr (Carroll to Egbert)			X			X			X	X	X			X	X			X	X	
E17 A. Walker Dr (Egbert to Gilman)			X			X			X						X					
E16 Gilman Ave (Third to A. Walker)			X	X		X			X	X				X	X					
C1 Griffith St	X	X	X															X	X	
C2 Thomas Ave	X	X	X																	
C3 Ingalls St	X	X	X																	
C4 Carroll (Hawes to Ingalls)	X	X	X				X													
D Hunters Point Transit Center			X					X	X	X	X		X	X	X	X		X	X	X
D1 Hunters Point Transit Center Road Improvements (D Street)			X			X		X	X	X	X		X	X	X	X		X	X	X
D2 Hunters Point Transit Center Road Improvements (Nimitz Avenue)			X			X		X	X	X	X		X	X	X	X		X	X	X
D3 Spear Ave			X							X				X						
E1 A. Walker Drive (Ingerson to Harney)			X			X														
E2 A. Walker Drive (Gilman to Ingerson)		X	X	X		X														

Table 1-7. Transit Improvements

BTI Project Segment/ Street Name	Basic Roadway Features			Transit Features																
	BRT-interim Curb & Gutter	Basic Signal Installation or Upgrades	Lighting Signage Utility Upgrades	Landscaping Ped lighting/Crosswalk Upgrades	Class I Bikelane (out-of-street)	Class II Bikelane (painted lane)	Class III Bikelane (sharrow)	Bicycle Commuter Facilities (lane/signage)	Bus Bulbouts	Transit-only lane	BRT Median	BRT Greenway	BRT Station with Features	Transit Priority Signals and Support Utilities	Transit Shelter/Seating/Lighting	Trolleywires and Poles (overhead)	Trolleybus substation	Berth/Roadbed/Transit Plaza	Terminal Facilities/Operator Support	Transit Mgmt Center
E3 Gilman Ave (A. Walker to Earl)			X	X		X			X						X					
E4 Gilman Ave (Earl to Donahue)		X	X	X		X			X						X					
E5 Harney Way (A. Walker to 8th St)			X	X					X	X	X	X		X	X					
E6 Harney Way (8th St to Ingerson)			X	X				X	X	X	X	X	X	X	X			X	X	
E7 Harney Way (Gilman to Ingerson)			X	X	X				X	X	X	X		X	X					
E8 Harney Way (Fitzgerald to Gilman)			X	X	X				X	X	X	X		X	X					
E9 Harney Way (Egbert to Fitzgerald)			X	X	X			X	X	X	X	X	X	X	X					
E11 Egbert Ave (A. Walker to Earl, incl park)			X					X	X	X	X	X	X	X	X					
E10 Egbert Ave (Earl to Harney, incl park)			X						X	X	X	X		X	X					
E12 Jamestown Ave (Third to A. Walker)			X	X		X														
E13 Ingerson Ave (Third to A. Walker)		X	X	X																
E14 Ingerson Ave (A. Walker to Earl)		X	X	X			X													
E15 Ingerson Ave (Earl to Harney)			X	X			X		X						X					
F1/2 Harney Way (A. Walker to Alana)			X	X	X			X	X	X	X	X	X	X	X					

Note: Addition information regarding the existing conditions and proposed project features of the new and existing roadways can be found in Appendix B (Visual Assessment Data Report) of the Visual Impact Assessment.

Source: City and County of San Francisco 2011

1.4.1.5 BICYCLE AND PEDESTRIAN IMPROVEMENTS

The BTI Project would rehabilitate/reconfigure existing bicycle and pedestrian facilities, and construct new bicycle and pedestrian facilities (sidewalks, crosswalks, bicycle lanes), connect discontinuous routes, and provide access to the Candlestick Point and HPS areas, including waterfront access and improved connection to the Bay Trail (refer to Figure 1-2a and Tables 1-4 through 1-6 for bicycle route improvements). Signalization, signage, and striping would enhance active non-motorized transportation, reduce vehicular conflicts, and improve safety.

1.4.1.6 CHANGES TO PARKING

Construction of the Build Alternative would result in a net increase in public parking. The Build Alternative includes construction of several new roads in the HPS and Candlestick Point areas

that would have parking on one or both sides of the street. The only existing road segments that would result in a loss in available parking would be Carroll Avenue between Ingalls Street and Hawes Street, and Arelious Walker Drive between Egbert Avenue and Carroll Avenue. This portion of Carroll Avenue is in a commercial area and currently has parking on one side of the street with a capacity for approximately 25 cars. This decrease in parking would be accounted for with the addition of parking along Arelious Walker Drive. The segment of Arelious Walker Drive that would add parking (25 parking spots) is approximately the same length as, and approximately 0.3 mile southeast of, the segment of Carroll Avenue that would remove parking. The result would be no net change in parking supply on these two streets.

1.4.1.7 INTERIM YEAR IMPROVEMENTS

The BTI Project Build Alternative would be phased to efficiently address the degree of rehabilitation, reconfiguration, and construction needed (e.g., some streets are currently more deficient than others, and in some areas roadways do not currently exist) and pacing of infrastructure construction in the area. The BTI Project would not depend on any other transportation improvements or development projects in the BTI Project area to function and would have independent utility through each of its phases.

Initial phases would focus on the roadways in the northern and central portions of the alignment (north of Gilman Avenue and west of Arelious Walker Drive) (refer to Figure 1-3). By interim year 2016, improvements would include the following roadways: Cesar Chavez Street, Evans Avenue, Cargo Way, Hunters Point Boulevard, Innes Avenue, all streets within the HPS (Donahue Avenue, Lockwood Street, Robinson Street, Fischer Street, D Street/Nimitz Street, Spear Street), Crisp Avenue, Thomas Avenue, Ingalls Street, Carroll Avenue, Gilman Avenue, and Arelious Walker Drive (northeast of Gilman Avenue). By BTI Project buildout in 2027, improvements would occur on the following roadways: Ingerson Avenue, Jamestown Avenue, Arelious Walker Drive (southwest of Gilman Avenue), Donahue Street, Harney Way, Alana Way, and roadways around the Transit Center.

Since the BTI Project is primarily a roadway improvement project, construction staging would mostly occur within existing rights-of-way. Construction staging would involve staging of construction vehicles, storage of construction materials, construction worker vehicles, delivery, and hauling trucks. While the exact routes that construction trucks would be using would depend on the location of the work, it is expected that Harney Way, Hunters Point Expressway, Innes Avenue, Evans Avenue, Cesar Chavez Street, and Third Street would be the primary routes between US 101 and the various components of the BTI Project.

1.4.1.8 DESIGN OPTION B

Under the potential condition that the stadium would not be removed and would continue to be used, shuttered, or removed and the site left vacant, a design option (herein referred to as Design Option B) has been considered.¹⁷ In this situation, there would be a modification of the route along Harney Way Extension between Harney Way/Jamestown Avenue and Egbert Street (Segments E-5 through E-9) and the Arelious Walker Extension eastward from Carroll Avenue to Jamestown Avenue. The pedestrian overcrossing located at the Jamestown Avenue/Harney Way/Hunters Point Expressway intersection is an integral part of stadium operations. As long as the stadium remains in this option, the pedestrian overcrossing would remain. Under this scenario, the Harney Way alignment would be reconfigured around the existing overcrossing (the number of lanes would remain the same).

¹⁷ Refer to Design Option B technical memorandum, December 18, 2012 (revised May 8, 2013).

In this design option, BRT and non-motorized traffic would be routed within a ROW across the existing stadium parking lot on an alignment similar to the proposed Harney Way Extension and two lanes of vehicular traffic in each direction. The Arelious Walker Drive Extension and the two retaining walls would not be constructed, and Giants Drive would remain in use for those traveling along Ingerson and Gilman avenues.

1.4.2 TRANSPORTATION DEMAND MANAGEMENT, TRANSPORTATION SYSTEM MANAGEMENT, AND MASS TRANSIT ALTERNATIVES

Measures typically included in Transportation Demand Management (TDM)¹⁸ and Transportation System Management (TSM)¹⁹ alternatives have already been incorporated into the Build Alternative. This includes a new BRT line connecting regional transit hubs to the Candlestick Point and HPS redevelopment areas, infrastructure for express bus lines, and TPS improvements along the Palou Avenue transit corridor. A solely mass transit alternative would not meet the purpose and need because it would not accommodate approved planned growth nor would it develop a more direct access route from US 101 to I-280. A transit-only alternative would not address future increased transportation demand related to localized congestion and would not create continuous roadways to areas of future development in Candlestick Point and HPS areas.

1.4.3 NO BUILD ALTERNATIVE

Under the BTI Project No Build Alternative, the CP-HPS Plan is assumed to be built out. However, since the CP-HPS Plan also includes the principal elements of the BTI Project, these elements are excluded from the No Build Alternative. The parts of the CP-HPS Plan that remain as part of the No Build Alternative include the mixed-use redevelopment of Candlestick Park stadium area and Hunters Point Shipyard together with a network of neighborhood orientated streets supporting the redevelopment. Hunters Point Expressway would be removed, but the Arelious Walker Drive Extension would be constructed as proposed in the CP-HPS Plan (three lanes in each direction). Four existing transit lines would be extended into the area and three new transit lines added. Additionally, approximately 20 net acres of Candlestick Park State Recreation Area would be transferred to the City in exchange for State Park funding, improved parkland and water access.

The No Build Alternative also assumes that by 2035, the proposed mixed-use development at Executive Park along with the US 101 Geneva/Harney Way interchange project would be complete. As a result, Harney Way would still be widened under the No Build Alternative. However, in general, the 2035 No Build scenario would include the following components.

¹⁸ Transportation Demand Management (TDM) alternatives focus on regional strategies for reducing the number of trips and miles traveled as well as increasing vehicle occupancy. The BTI Project includes BRT and multimodal options as well as new routes to travelers, expanding traveler choice in terms of travel method, travel time, travel route travel costs, and the quality and convenience of the travel experience.

¹⁹ Transportation System Management (TSM) alternatives include actions that increase the efficiency of existing facilities, the number of vehicle trips a facility can accommodate, and include strategies like: auxiliary lanes, turning lanes, reversible lanes, and traffic signal coordination; as well as encouraging automobile, public and private transit, bicycle and pedestrian improvements as elements of a unified urban transport system. Modal alternatives integrate multiple forms of transportation modes. The BTI Project includes many TSM elements, including but not limited to traffic signal coordination and bicycle/pedestrian improvements as elements of a unified urban transport system.

- On streets that currently exist (other than Harney Way), where the Build Alternative improvements are being proposed, the existing roadway configuration is assumed (no rehabilitation/reconstruction takes place).
- Bus route improvements (e.g., extension of existing bus lines, new express routes to Candlestick Point and HPS) associated with the CP-HPS Plan development would be included, with the exception of BRT service. BRT service would not be assumed because under No Build conditions, bus lanes would not be provided along Harney Way or the Aurelius Walker Drive Extension. SFMTA has indicated that they would not run BRT service along this route without these bus lanes.

Thus, under the No Build Alternative, there would be fewer improvements to transit service in the BTI Project area. Regional and local travelers would continue to use existing streets and LOS would continue to deteriorate (refer to Table 1-3). No changes would be made to existing streets to add provision for alternative modes of travel (i.e., sidewalks, crosswalks, bicycle lanes, signage). There is no phasing detail associated with the No Build Alternative.

1.4.4 IDENTIFICATION OF A PREFERRED ALTERNATIVE

After the Environmental Assessment (EA) public circulation period, all comments will be considered, a preferred alternative will be selected, and the BTI Project's effects on the environment will be documented. If it is determined that the proposed action does not significantly impact the environment, a Finding of No Significant Impact (FONSI) in accordance with NEPA will be issued. If it is determined that the BTI Project has the potential to result in a significant impact, an Environmental Impact Statement (EIS) will be prepared.

1.4.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

This section describes the alternatives development and screening process that the BTI Project has undergone. Prior to the current BTI Project, the BTI Project team conducted an alternatives development and screening process (in 2005) for a version of the BTI Project which, while similar in purpose and need, also addressed truck traffic anticipated for existing and future commercial and industrial land uses in the Project area. Multiple alternatives were considered and eight build alternatives were under consideration (as described in the Project Screening Report) (City and County of San Francisco 2005). Work on the BTI Project was suspended in early 2010 awaiting the outcome of the CP-HPS Plan. With the adoption of the CP-HPS Plan EIR, the planning context for the BTI Project area changed to provide a more defined understanding of the transportation needs in the Project area.

The BTI Project purpose and need (*Section 1.3 Purpose and Need*) was updated in 2010 following changes to the local planning context. BTI Project technical team members met on June 6, 2010, to discuss the Project status and to consider Project alternatives. Alternatives considered included a combination of improving and extending existing streets and roadways, increasing transit infrastructure and operations, and reprogramming existing streets to meet vehicular, pedestrian/non-motorized and transit needs as envisioned in the City's TPS design concepts.

Geographic and regulatory constraints within the Project study area (refer to Figure 1-2a) influenced the location and design of potential Project alternatives.

Geographic/Physical constraints – The Project area is an isolated peninsula with limited access points. Specific geographic constraints include Bayview Hill Park and Open

Space in the southwestern portion of the Project area east of US 101, the San Francisco Bay shoreline (occupied largely by the CPSRA) along the southeastern Project area boundary, and the hilly terrain of Hunters Point Hill occupied by Ridgeway Plaza and Hilltop Park as well as the Hunters View housing developments to the north. Historic land use patterns of residential, commercial, and industrial development and a corresponding street grid of the Bayview and Hunters Point neighborhoods are additional physical constraints.

Regulatory Constraints - The City of San Francisco has a number of adopted federal, state, and regional policies restricting shoreline development and Bay fill. Furthermore, the City's established land use designations and transportation corridors directed that transportation infrastructure be constructed between the north and south gates of the HPS, and to address the need for improved multimodal and transit access in the Project area to support planned land use development.

Given these geographical and regulatory restrictions, the results of the alternatives development session on June 6, 2010, as depicted in Figure 1-5, was that there was only one BTI Project corridor in which Project improvements could address the purpose and need, while remaining consistent with the planning framework set out in the newly adopted CP-HPS Plan. The BTI Project corridor is generally defined as the area northeast of the US 101/Harney Way interchange to the south of Bayview Hill Park through the site of the existing Candlestick Park Stadium and the Bayview industrial district. Potential design options using adjacent streets with the same start and end points and similar environmental impacts were also discussed (refer to the Alternatives and Options considered in Figure 1-5).

Three potential alternatives were identified within the BTI Project corridor. This included the Proposed Project Build Alternative (refer to Figure 1-2a) and two alternatives for bridge crossings over Yosemite Slough (refer to Figure 1-5). Transit alternatives were also considered but were limited to operational changes (changes in headways and peak/off-peak schedules) as the transit routes were extensions of existing transit lines and planned and approved routes.

Anticipated environmental impacts resulting from the two bridge alternatives included:

Visual/Aesthetics – Potential impacts included changes to visual conditions as a result of the loss of trees, new lighting, and introduction of a new built structure across Yosemite Slough (the Arelious Walker Drive bridge would be substantially longer, and both bridges would result in a change in key views). Depending on the bridge location, the view would be different; however both were anticipated to have a comparable level of visual/aesthetic impacts.

Water Quality/Stormwater Runoff (Section 404 Clean Water Act) – Potential impacts related to increase in impermeable surfaces, and temporary construction impacts related to water volume, flow, and increased siltation, sedimentation, erosion, and water turbidity were identified under these two bridge alternatives. Furthermore, the Arelious Walker Drive Bridge would not cross any areas known to be served by storm water conveyances (and would therefore require additional utilities).

Geology/Soils/Seismic – Potential impacts included increased exposure to geologic hazards including groundshaking, liquefaction, lateral spreading, and corrosive soils.

Hazardous Waste/Materials – Similar to the Build Alternative, the bridge alignments would pass adjacent to an HPS area known to have significant concentration of

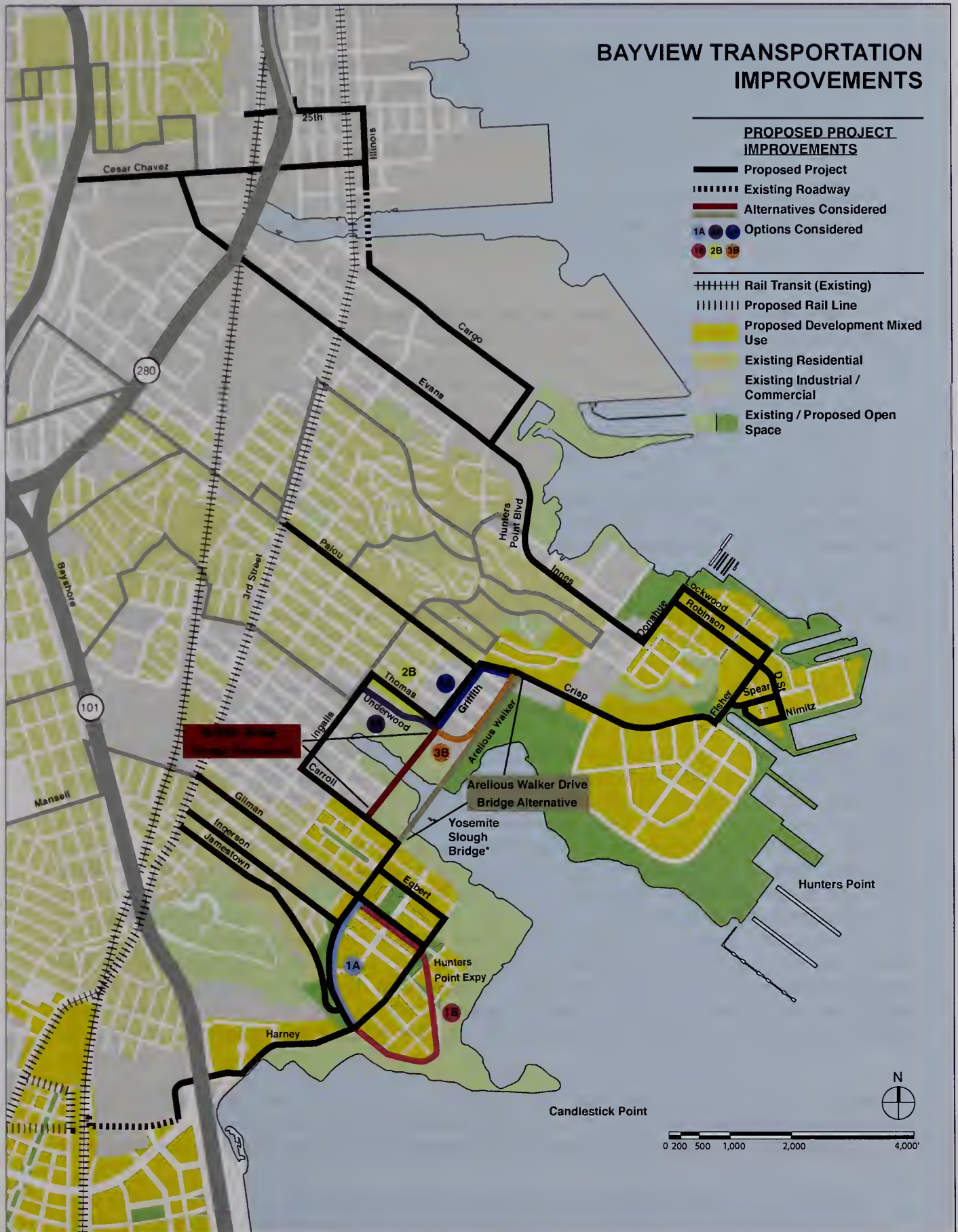


Figure 1-5
Alternatives Considered

hazardous materials (radiological isotopes). Also there is a potential for exposure to soil contaminated by aerially deposited lead. The bridge alignment along Arelious Walker Drive would be most proximate to the hazardous material site (Parcel E of the HPS located south of Arelious Walker Drive and west of Crisp Avenue), while the Build Alternative and Griffith Street Bridge would follow a similar route.²⁰

Wetlands and Other Waters of the US – The bridge alignments would pass through area of wetlands and other waters, temporarily and permanently affecting acreage. Acreages of “wetlands and other waters” impacted would be higher for the Arelious Walker Drive Bridge alignment.

Biological Resources (Threatened and Endangered) – The bridge alignments crossed over a sensitive aquatic resource area (Yosemite Slough) and could potentially impact coastal salt marsh which are habitat for Pacific cordgrass. There was potential for impact to special-status wildlife species (salt marsh harvest mouse, California brown pelican, double-crested cormorant, salt marsh common yellowthroat), migratory birds, and fish (Sacramento River Winter-Run Chinook Salmon ESU, Central Valley Spring-Run Chinook Salmon ESU, Central California Coast Steelhead DPS, Central Valley Steelhead DPS, North American Green Sturgeon Southern DPS, and Longfin Smelt). Construction period impacts would include driving piles through the bay mud in the channel, which could potentially harm sensitive aquatic life. The bridge alignment along Arelious Walker Drive would have greater Bay fill impacts than the bridge alignment on Griffith Street.

Section 4(f) Resources (Parks and Recreation) – The bridge alignments would cross through portions of CPSRA and over the San Francisco Bay Trail, which are publicly owned park facilities. This was considered a potential use of Section 4(f) resources. The bridge alignment along Arelious Walker Drive would have less park and recreation facilities impacts compared to the bridge alignment on Griffith Street.

The BTI Project team reconvened on June 29, 2010 to review the results of the initial alternatives development process and to refine and screen the initial results. Although the bridge alternatives considered would create a more direct access route between Candlestick Point and HPS (as set out in the purpose for the Project [see *Section 1.3.1*]) they would not perform a major function in meeting the overall purpose of the Project in terms of improving traffic operations, developing a more direct access route between US 101 and I-280, and providing multi-modal access to the Project area. The two bridge alternatives would also be at substantial additional cost (it was anticipated that the bridge crossing at Griffith Street would be less expensive than crossing at Arelious Walker Drive due to reduced bridge length and foundation costs, but both bridge options would be more expensive than a route around Yosemite Slough). Thus, the team concluded that the Build Alternative was a viable avoidance alternative for Section 4(f) and aquatic resources impacts that would result from the bridge alternatives. It consequently became the only build alternative presented in this environmental document.

It should however be noted that although not required for the BTI Project, a pedestrian/bicycle/game day bridge is still part of the CP-HPS Plan, and therefore is included as part of the No-Build Alternative in this document as a reasonably foreseeable eventuality.

²⁰The Arelious Walker Drive Bridge had the greatest anticipated need for excavation of soil due to radiological wastes. The Griffith Street Bridge radiological waste excavation was roughly equivalent to the Build Alternative.

With BTI technical team concurrence of a Project alignment that minimized impacts to Section 4(f) and the aquatic environment, future refinements of the Build Alternative were identified to minimize right-of-way impacts, eliminate street grade conflicts, maximize BRT and pedestrian/non-motorized usage, and conform to the southern and northern Project roadway termini. The various alignment refinements including moving forward with only Option 1A, 2B, and 3A (refer to Figure 1-5). In addition to considering these options around Yosemite Slough, the BTI technical team also took into account what would occur should the Candlestick Park Stadium not be demolished. This possibility has been discussed in the environmental document as Design Option B (refer to *Section 1.4.1.8*).

In summary, following consideration of several design options and the three alternatives within the BTI Project corridor, a Build Alternative route was derived from the alternatives previously considered, and is the locally preferred alternative. At the July 7, 2011 meeting of the BVHP PAC's Land Use Subcommittee, members were presented with the findings of the technical screening, including the conclusion that based on the geographic constraints of the Project corridor; avoidance of Section 4(f) resources and aquatic resources; and based on other refinements to minimize right-of-way impacts, eliminate street grade conflicts, maximize BRT and pedestrian/non-motorized usage; and conform to the southern and northern Project roadway termini; that only one viable build alternative could be carried forward. The BVHP PAC encouraged BTI Project technical team members to move forward with the Build Alternative that supported the overall community vision (written endorsement of the screening process from the HPS CAC was later provided).

1.5 PERMITS AND APPROVALS NEEDED

The following permits, reviews, and approvals shown in Table 1-8 would be required for BTI Project construction.

Table 1-8. Anticipated Permits and Approvals Required

Agency	Approval or Permit	Status
California Department of Fish and Wildlife (CDFW)	<p>Under Section 2081, the CDFW may issue a permit to authorize take for scientific, educational, or management purposes, or take that is incidental to otherwise lawful activities.</p> <p>The Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGF) Section 3503.5 prohibit the "take" of migratory birds, nests, and young.</p> <p>Animals fully protected in California are covered in the California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles], and 5515 [fish].</p> <p>Under Section 1602, public agencies are required to notify CDFW before undertaking any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. When an existing fish or wildlife resource may be substantially adversely affected, CDFW will propose reasonable project changes to protect the resources. This will be formalized in a streambed alteration agreement (SAA) that becomes part of the plans, specifications, and bid documents for the project.</p>	If necessary, to be obtained during the final design phase of the BTI Project.

Table 1-8. Anticipated Permits and Approvals Required

Agency	Approval or Permit	Status
State Historic Preservation Office (SHPO)	In compliance with Section 106 of the National Historic Preservation Act of 1966 as amended, Caltrans wrote SHPO requesting concurrence with ineligibility findings for the NRHP for two properties evaluated in the Addendum HRER after project refinements eliminated some alternatives. Stipulation I.A of the projects programmatic agreement (PA) permits area of potential effect (APE) modification without SHPO consultation. The March 15, 2012 Caltrans' letter to SHPO did not receive a response and concurrence was assumed under provisions of the PA.	SHPO concurrence with Caltrans' findings of ineligibility of two properties evaluated in the Addendum HRER is assumed under provisions of the PA.
California State Parks	The City and County of San Francisco seeks concurrence from the Candlestick Point State Recreation Area (CPSRA) that the Project will not adversely affect the activities, features, and attributes that qualify the property (discussed in detail in Appendix A) for protection under Section 4(f). Furthermore, the public will be afforded the opportunity to review and comment on the effects of the project on the identified Section 4(f) resource as part of the circulation of the draft EA.	
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Water Quality Certification pursuant to Section 401 of the Clean Water Act (CWA); National Pollutant Discharge Elimination System (NPDES) or Countywide Non-point Source Permit for discharge of stormwater into surface waterways pursuant to Section 402 of the CWA; includes contractor's preparation of a storm water pollution prevention plan (SWPPP).	Upon the selection of a preferred alternative, consultation with RWQCB (including obtaining NPDES Permit and preparation of a SWPPP) will commence.
California Department of Toxic Substances Control (DTSC)/ California Environmental Protection Agency (CalEPA)	Approval of voluntary clean-up agreement, transportation plan, soil management plan, and health and safety plan for construction operations. May request application of aerially deposited lead variance, depending on soil tests to be performed prior to construction. May require DTSC approval for disposal of materials from any older structures or buildings requiring demolition.	Upon the selection of a preferred alternative, consultation with DTSC/CalEPA (including approval of a voluntary clean-up agreement, related plans, and disposal of building materials) will commence.
California State Lands Commission (SLC)	Application for State Land Use Agreement (lease).	Upon the selection of a preferred alternative, if necessary, application for a SLC Use Agreement will commence.
Bay Conservation and Development Commission (BCDC)	BCDC permit required for dredging or filling within 100 feet of the San Francisco Bay. Projects within this shoreline band are required to obtain a permit from BCDC to prevent unnecessary filling of the Bay and to promote public access to the Bay. Coastal consistency review pursuant to the Coastal Zone Management Act.	Upon the selection of a preferred alternative, consultation with BCDC (including, if necessary, obtaining a permit for dredging and filling within 100 feet of the Bay) will commence.
San Francisco Public Utilities Commission (SFPUC)	Wastewater Discharge Permit (Combined Sewer System)	If necessary, to be obtained during the final design phase of the BTI Project.
San Francisco Department of Public Works (SFPDW)	In accordance with SFPDW Article 16: the Urban Forestry Ordinance, the BTI Project will require a Tree Removal Permit	If necessary, to be obtained during the final design phase of the BTI Project and prior to construction.

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter presents information on the environmental setting in the BTI Project area and the environmental consequences of the BTI Project. Avoidance, minimization, and mitigation measures to reduce BTI Project effects are also proposed. There are no changes in impacts arising from Design Option B. Background technical reports prepared for the BTI Project are listed at the end of the document.

Topical Areas Addressed in the Environmental Assessment

HUMAN ENVIRONMENT

- Land Use
- Growth
- Community Impacts
- Utilities/Emergency Services
- Traffic and Transportation/Pedestrian and Bicycle Facilities
- Visual/Aesthetics
- Cultural Resources

PHYSICAL ENVIRONMENT

- Hydrology and Floodplain
- Water Quality and Storm Water Runoff
- Geology/Soils/Seismic/Topography
- Hazardous Waste/Materials
- Air Quality
- Noise and Vibration

BIOLOGICAL ENVIRONMENT

- Natural Communities
- Wetlands and Other Waters
- Plant Species
- Animal Species
- Threatened and Endangered Species
- Invasive Species

Topical Areas Considered but Determined Not to be Relevant and with No Adverse Impacts

Through updated screening and environmental analysis conducted for the BTI Project, the following environmental issues were considered but no adverse effects were

identified.¹ Consequently, there is no further discussion regarding these issues in this document.

- **Wild and Scenic Rivers:** Based on aerial photographs, U.S. Geological Survey (USGS) maps, and field visits, it has been determined that there are no wild and scenic rivers located in the BTI Project vicinity.
- **Farmlands/Timberlands:** Based on aerial photography, property records, and field visits, it has been determined that there are no cultivated farmlands or timberlands located in the BTI Project vicinity.
- **Paleontology:** Analysis of paleontological resources (fossil remains, fossil localities, and formations that have produced fossil materials) is not required for projects located off the state highway system. No further discussion of paleontological resources is included in this environmental document.

¹ In November 2011, the Preliminary Environmental Study (PES) Form was submitted to Caltrans, District 4. Response from Caltrans District 4 was provided on December 1, 2011 that did not include further study of Wild and Scenic Rivers, Farmlands/Timberlands, or Paleontology.

2.1 HUMAN ENVIRONMENT

2.1.1 LAND USE

This section of the document discusses the land use and planning findings as presented in the Community Impact Assessment (CIA) technical memorandum prepared for the BTI Project (April 2013 and June 2012). The CIA technical memorandum provides information on the existing land use characteristics in the Bayview Hunters Point community; evaluates the BTI Project for consistency with relevant plans and policies; and identifies effects associated with land use changes, including growth inducement.

2.1.1.1 EXISTING AND FUTURE LAND USE

Major Land Uses

The BTI Project is located in the Southeast Community of San Francisco. The BTI Project area is located within the existing Bayview Hunters Point and Hunters Point Shipyard (HPS) areas (as identified in the San Francisco General Plan Area Map) (City and County of San Francisco 2012). Bayview Hunters Point encompasses the neighborhoods of Executive Park, Bayview Hill, Candlestick Point, South Basin, Silver Terrace, Town Center (Third Street), Northern Industrial, Central Bayview (Oakdale), Hunters Point Hill, India Basin, and Hunters Point Shoreline. As shown in Figure 1-2a, the Bayview Hunters Point area is generally bounded by Cesar Chavez Street to the north, US 101 to the west, San Mateo County to the south, and San Francisco Bay to the east. Natural features include Hunters Point Hill and Bayview Hill as well as the shorelines of South Basin, Yosemite Slough, India Basin, and Candlestick Point State Recreation Area (CPSRA). Currently, land uses in the Bayview Hunters Point Area are residential, neighborhood retail, and office.

The BTI Project site is also partially located in the HPS which is a mostly vacant former naval shipyard that once included an industrial area. The Hunters Point neighborhood includes Hunters Point Hill, a former redevelopment project with approximately 1,000 homes and a school. The Candlestick Point area is dominated by the Candlestick Park football stadium, CPSRA, and the Alice Griffith public housing complex. The existing BTI Project limits include paved and unpaved roadways, sidewalks, planted medians, ornamental landscaping, street trees, traffic lights, streetlights, and signage. Open space is located along the western shoreline of the San Francisco Bay.

Development Trends

The BTI Project is being proposed by the City to redevelop the Southeast Community. The development trend in the BTI Project area is one of integrated development of residential, commercial/retail/entertainment, and park uses (with consideration of the waterfront area) to alleviate poverty, increase economic opportunity, and improve the overall health and quality of life for residents (City 2012). Several past, present, and reasonably foreseeable projects are listed in Table 2.1.1-1 and are illustrated in Figure 1-4. Other possible future projects that may have been part of planning efforts are speculative and are not included in Table 2.1.1-1.

Table 2.1.1-1. Past, Present, and Reasonably Foreseeable Projects

Project Name/Jurisdiction	Acreage/ Density	Proposed Uses	Status
Development Projects¹			
India Basin Shoreline Area C (proposed), City and County of San Francisco.	76 acres. 1,200 residential units, 1,500 thousand square feet (ksf) retail/office	Hunters Point Hill along India Basin Cove. Mixed use residential, commercial, office development.	EIR in progress. No construction.
Visitation Valley/Schlage Lock (VV/SL) Redevelopment Program, City and County of San Francisco.	20 acres. 1,600 residential units, 200 ksf retail/community	Adjacent to Bayshore Boulevard and Leland Avenue. Mixed-use residential, retail/commercial, community, open space development.	EIR certified. No construction at this time, permit status unknown.
Cow Palace (proposed), Daly City.	100 acres. 1,700 residential units, 550 ksf retail/R&D	Daly City/Cow Palace site. Mixed-use residential and retail/R&D.	No environmental document. No project activity.
Brisbane Baylands (proposed), City of Brisbane.	684 acres. 8,500 ksf of retail/office/hotel/warehousing/distribution	Brisbane Lagoon, west of US 101 and south of Beatty Road. Mixed-use commercial, retail, office, residential, hotel, and light industrial.	Specific Plan drafted. NOP issued. No environmental document.
Executive Park, City and County of San Francisco.	71 acres. 3,400 residential units, 90 ksf retail, reduction of 320 ksf office.	Adjacent to Harney Way, east of US 101. Mixed-use residential and commercial development. Includes local roadway improvements, such as signalization of Harney Way/Executive Park Boulevard East, signalization and reconfiguration of Harney Way/Alana Way/Thomas Mellon Drive, widening of Harney Way, signalization of Executive Park Boulevard West/Alana Way and restriping of the southbound lane, widening of Alana Way, signalization of Alana Way/Beatty Road.	EIR certified. No construction, permit status unknown.
Hunters View, City and County of San Francisco.	22 acres. 800 residential units, 30ksf retail/community	Located south of Evans Avenue and west of Hunters Point Boulevard. Mixed-use residential and retail/community development.	EIR certified. Under construction. Phase I permits received, Phase II permits are pending.

Table 2.1.1-1. Past, Present, and Reasonably Foreseeable Projects

Project Name/Jurisdiction	Acreage/ Density	Proposed Uses	Status
CP-HPS Phase II (Hunters Point Shipyard Phase I), City and County of San Francisco. ¹	702 acres, 12,100 residential units, 3,700 ksf retail office/R&D/commercial.	India Basin/HPS and Candlestick Point area. Mixed-use residential, retail/office/R&D, hotel, artist live/work space, community, recreation, and parklands. Includes transportation/transit improvements to internal street network/grid in HPS and in Candlestick Point.	EIR certified. Separate CP-HPS Phase I Project activity underway in HPS. Infrastructure permits have been received; vertical building permits are pending.
	Transfer of 23 net acres adjacent to the CPSRA's border to the City of San Francisco	Development activities and management objectives at the Candlestick Point State Recreation Area (CPSRA or SRA)	Final EIR circulated in 2012. No construction, permit status unknown.
Transportation Projects			
Bayshore Intermodal Station, City and County of San Francisco.	n/a	Creation of a high-visibility community-focused station area with intermodal connections to Caltrain, light rail, and buses.	Final Bayshore Intermodal Station Access Study adopted by the SFCITA in March 2012.
Bi-County Transportation Improvements (City and County of San Francisco and San Mateo County).	n/a	Several transportation improvements in the Project area (and in San Mateo County) have been studied to address land use growth. The study includes the following Project area (and areas immediately adjacent west of US 101) improvement projects: US 101 Interchange, Geneva Avenue Extension, Harney Way Re-2 design, Yosemite Slough Bridge, new Oakdale Caltrain Station, Harney bus rapid transit (BRT) Facility, Geneva Avenue TPS Treatments/BRT Facility, T-Third Segment "S" Extension, and Palou TPS Street Treatments	Ongoing public outreach and land use scenarios being developed. No construction. Bi-County Draft Report anticipated in 2013.
Caltrain Electrification	n/a	Electrification of the Caltrain line from San Francisco to San Jose. This project would convert existing commuter rail using diesel locomotives to electric power. Electrification provides train operation benefits which allow for more frequent train service in the Caltrain corridor.	EA/FEIR prepared in 2009, to be updated.

Table 2.1.1-1. Past, Present, and Reasonably Foreseeable Projects

Project Name/Jurisdiction	Acreage/ Density	Proposed Uses	Status
Blue Greenway (San Francisco PORT)	n/a	San Francisco PORT project, includes a 13-mile trail corridor (from China Basin Channel to the San Francisco County Line) and linking open space areas, development recreation/green infrastructure and green corridors, provides public access through implementation of the San Francisco Bay Trail, the San Francisco Bay Area Water Trail, installation of public art/interpretive elements, support stewardship, advocate for waterfront access.	Draft study has been prepared. Ongoing public outreach.
<p>Notes: The projects included in this table correspond to the projects described in the 2012 Fehr & Peers TIS. It should also be noted that 833-989 Jamestown is a proposed residential development on Jamestown Avenue. This proposed development would have minimal effect on the BTI Project or the future design of Jamestown Avenue.</p> <p>¹An ongoing project in HPS is the U.S. Navy remediation (disposal and reuse).</p> <p>²The Quint Street Bridge Replacement is within the study area for the Oakdale Station Study. This proposed development would have minimal effect on the BTI Project and is not discussed in the table.</p>			

2.1.1.2 CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS

California state law requires each city and county to adopt a general plan for the physical development of the city or county, and any land outside its boundaries that is related to its planning. The general plan expresses the community's development goals and contains public policy relative to the distribution of future land uses, both public and private. The policies of the general plan are intended to underlie most land use decisions. Pursuant to state law, subdivisions, capital improvements, development agreements, and many other land use actions must be consistent with the adopted general plan.

Coastal Zones

The BTI Project is within the State Coastal Zone. The Coastal Zone Management Act of 1972 (CZMA) is the primary federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the CZMA; they include the protection and expansion of public access and recreation, the protection, enhancement and restoration of environmentally sensitive areas, protection of agricultural lands, the protection of scenic beauty, and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the federal CZMA delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments (15 coastal counties and 58 cities) to enact their own local coastal programs (LCPs). This project is subject to the Bay Conservation and Development Commission (BCDC) local coastal program. LCPs determine the short-and long term use of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A federal consistency determination may be needed as well. The BCDC, created before the California Coastal Act, retains oversight and planning responsibilities for development and conservation of coastal resources in the Bay Area. The regulatory authority for the BCDC consists of the McAteer-Petris Act and the Suisun Marsh Preservation Act, and it is delegated federal authority under the CZMA.

2035 Regional Transportation Plan (RTP) for the San Francisco Bay Area

Regional transportation planning for the area is conducted by the MTC, the regional transportation planning agency for the nine-county Bay Area. Services include preparation and adoption of the *Transportation 2035 Plan for the San Francisco Bay Area* (2009) that details transportation planning throughout the Bay Area through 2035.

San Francisco Bay Trail Plan, San Francisco Bay Plan, and the Candlestick Point State Recreation Area General Plan

Certain plans and policies are applicable to the southern portion of the BTI Project as it passes close by the Bay and the Candlestick Point State Recreation Area (CPSRA). These include the *Bay Trail Plan* (1989), the *San Francisco Bay Plan* (1968), and the

CPSRA General Plan (1978, amended 1987). The *Bay Trail Plan*, adopted by the Association of Bay Area Governments (ABAG) in 1989, proposed the construction of a regional trail around San Francisco and San Pablo Bays. As a shoreline community, Bayview Hunters Point lies along areas proposed for the Bay Trail. The *San Francisco Bay Plan* was adopted in 1968 by the BCDC and provides findings and policies to guide future uses of the bay and shoreline, certain waterways, salt ponds and managed wetlands, and maps that apply these policies to the greater San Francisco Bay. The CPSRA General Plan was approved by the California State Parks System and provides general guidelines for improvements within the CPSRA.

San Francisco General Plan

Land use planning in the study area is governed by the *San Francisco General Plan* (1986, amended 1996), which includes 10 elements for the entire City as well as more-specific area plans for 10 designated areas within San Francisco. The general plan contains goals, objectives, and policies that guide growth and development within areas under the City's jurisdiction.

BAYVIEW HUNTERS POINT AREA PLAN/BAYVIEW HUNTERS POINT AND HUNTERS POINT SHIPYARD REDEVELOPMENT AREA

The *San Francisco General Plan* contains land use designations and policies guiding development in the BTI Project area. These designations and policies are further specified in the *Bayview Hunters Point Area Plan*, adopted with amendments in 2010. The existing land uses within the study area reflect the City's zoning maps, but future development and redevelopment uses are intended to follow the guidelines and policies of the *Bayview Hunters Point* and *Hunters Point Shipyard Redevelopment Plans*, each as amended in 2010. The Redevelopment Plans enforce more detailed design standards and guidelines for future development by reference to the *Candlestick Point* and *Hunters Point Shipyard Design for Development* documents, which were approved by the San Francisco Planning and Redevelopment Commissions as part of the HPS/CP project entitlements in 2010.

San Francisco Bicycle Plan

Corresponding sections of the *San Francisco General Plan*, *San Francisco Planning Code*, and *San Francisco Transportation Code* will be amended to reflect the adopted *San Francisco Bicycle Plan*. A Final EIR for the bicycle plan was certified in June 2009. The proposed project's bicycle route changes are addressed in the Bicycle Plan as long-term improvements.

2.1.1.3 ENVIRONMENTAL CONSEQUENCES

As described above, the *San Francisco General Plan*, Bicycle Plan, *Bayview Hunters Point Area Plan*, *Bayview Hunters Point Bay Trail Plan*, *San Francisco Bay Plan*, and *Transportation 2035 Plan for the San Francisco Bay Area* set forth goals and policies that guide development in the Project area. Table 2.1.1-2 contains an evaluation of the consistency of the BTI Project alternatives with the relevant local plans and policies. As shown in Table 2.1.1-2, the Build Alternative would be consistent with local planning goals, policies, and objectives for diverting commercial traffic from residential

neighborhoods and improving access to recreational amenities in the vicinity.¹ The No-Build Alternative would not support achievement of the stated goals and policies and would not be consistent with local planning goals, policies, and objectives.

¹ For the purposes of this analysis, where the BTI Project meets a majority of the goals and objectives of a plan, it is described as “consistent.” Where the project alternative does not meet the majority of the goals and objectives of a plan, it is described as “not consistent.”

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
San Francisco General Plan—Transportation Element		
<p>Policy 1.1: Involve citizens in planning and developing transportation facilities and services, and in further defining objectives and policies as they relate to district plans and specific projects.</p>	<p>Consistent. A public outreach program designed to involve and inform local residents and the general public is an integral part of the proposed project. Two citizen-based committees are actively involved with the public outreach program, the BVHP PAC and the San Francisco Transportation Authority Citizens Advisory Committee (SF CAC). The BVHP PAC is a local organization that provides advice, recommendations, and direction to the San Francisco Redevelopment Agency. The SF CAC is an appointed committee comprised of local citizens whose purpose is to provide insight on the community perspective by offering direct input and acting as a liaison between the Transportation Authority and the community.</p>	<p>Not consistent. Under the No Build Alternative transportation facilities and services included in the Build Alternative would not be developed. Other planned and programmed transportation projects could move forward that address transportation needs in the area.</p>
<p>Policy 1.2: Ensure the safety and comfort of pedestrians throughout the city.</p>	<p>Consistent. The Build Alternative includes several features which provide convenience and safety for pedestrians. These elements include sidewalks, bicycle lanes, signage, lighting, street trees, and Americans With Disabilities Act (ADA) compliant curb ramps.</p>	<p>Not consistent. Under the No Build Alternative improvements to pedestrian facilities included in the Build Alternative would not move forward.</p>
<p>Policy 2.4: Organize the transportation system to reinforce community identity, improve linkages among interrelated activities and provide focus for community activities.</p>	<p>Consistent. The Build Alternative provides the infrastructure for a new BRT line connecting the regional transit hubs to the Project area. The Build Alternative also includes transit preferential street improvements along the Palou Avenue transit corridor. These improvements are designed to maintain a community feeling.</p>	<p>Not consistent. Under the No Build Alternative these transportation improvements would not be developed, forfeiting reinforcement of community identity, improving linkages among interrelated activities and providing focus for community activities.</p>

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
Policy 8.1: Ensure that the Coast Trail, the Bay Trail, and the Ridge Trail remain uninterrupted and unobstructed where they pass through San Francisco.	Consistent. The Bay Trail currently has two discontinuous segments of off-street pathways in the BTI Project area—one in the area of Candlestick Point and Harney Way, and one which surround India Basin. The Build Alternative would not include the construction of any structures that would interrupt or obstruct the Bay Trail.	Consistent. Under the No Build Alternative no structures would be constructed and the Coast Trail, Bay Trail, and Ridge Trail would not be interrupted or obstructed.
Policy 9.2: Where bicycles are prohibited on roadway segments, provide parallel routes accessible to bicycles or shuttle services that transport bicycles.	Consistent. Existing bicycle facilities would be maintained or improved under the Build Alternative and several new bicycle facilities would be constructed.	Not consistent. Under the No Build Alternative, no roadway (and associated bicycle facilities) would be constructed.
Policy 15.1: Discourage excessive automobile traffic on residential streets by incorporating traffic-calming treatments.	Consistent. The Build Alternative includes traffic-calming features (e.g., bulb outs, signalization) which contribute to the safety of road users and pedestrians.	Not consistent. Under the No Build Alternative, no changes to existing roadways (including traffic-calming treatments) would occur. Areas where there is excessive automobile traffic on residential streets would remain.
Policy 18.1: Wherever feasible, divert through automobile and commercial traffic from residential neighborhoods onto major and secondary arterials, and limit major arterials to nonresidential streets wherever possible.	Consistent. Major and secondary arterials carry traffic among districts in the City. Local streets are intended only to provide access to and from homes and other uses within neighborhoods. However, many residential streets in the Bayview Hunters Point area function as major or secondary arterials for truck traffic serving industrial businesses along the South Basin and Shipyard. The purpose of the BTI Project is to improve the existing area roadway system to provide multi-modal transportation infrastructure, including developing a more direct traffic access route from US 101 to Candlestick Point and HPS.	Not consistent. Under the No Build Alternative, no changes to existing roadways (including improvements such as signage) would occur. Areas where there is excessive automobile traffic on residential streets would remain unchanged.

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
Policy 18.2: Design streets for a level of traffic that serves, but will not cause a detrimental impact on adjacent land uses, or eliminate the efficient and safe movement of transit vehicles and bicycles.	Consistent. The implementation of traffic-calming measures, in conjunction with the roadway improvements along the designated the Build Alternative access route would accommodate future through traffic and while minimizing effects on residential neighborhoods.	Not consistent. Under the No Build Alternative, no changes to existing roadways (including improvements such as signage) would occur. Areas where there is excessive automobile traffic on residential streets would remain unchanged.
Policy 18.4: Discourage high-speed through traffic on local streets in residential areas through traffic "calming" measures that are designed not to disrupt transit service or bicycle movement.	Consistent. This Policy reflects the same sentiment as Policies 15.1 and 18.1, discussed above. The discussions provided for those policies would also apply to Policy 18.4. In addition, the Build Alternative would continue to maintain existing bicycle routes and access along the designated access route.	Not consistent. Under the No Build Alternative, no changes to existing roadways (including improvements such as signage or calming measures) would occur.
Policy 23.3: Maintain a strong presumption against reducing sidewalk widths, eliminating crosswalks and forcing indirect crossings to accommodate automobile traffic.	Consistent. The Build Alternative includes the provision of new sidewalks or expanded sidewalks to accommodate active modes of transportation.	Not consistent. Under the No Build Alternative existing deficient sidewalks would remain unchanged.
Policy 23.5: Establish and enforce a set of sidewalk zones that provides guidance for the location of all pedestrian and streetscape elements, maintains sufficient unobstructed width for passage of people, strollers and wheelchairs, consolidates raised elements in distinct areas to activate the pedestrian environment, and allows sufficient access to buildings, vehicles, and streetscape amenities.	Consistent. The Build Alternative includes sidewalk bulb-outs at corners and bus stops, new ADA compliant curb ramps, new curbs, and sidewalks.	Not consistent. Under the No Build Alternative existing deficient sidewalks would remain unchanged.

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
San Francisco General Plan—Commerce and Industry Element		
Policy 4.7: Improve public and private transportation to and from industrial areas.	Consistent. The implementation of the Build Alternative would improve the efficiency of public and private travel to and from the major industrial areas of the Bayview Hunters Point area.	Not consistent. Under the No Build Alternative, no roadway (and associated connection to industrial areas) would be constructed.
Policy 5.9: Redevelop the HPS to provide employment in the industrial, maritime industrial, research and development, and cultural sectors, consistent with the HPS Redevelopment Plan.	Consistent. The Build Alternative would provide the roadway and transit improvements necessary to facilitate employment opportunities in the HPS.	Not consistent. Under the No Build Alternative, Build Alternative roadways (and associated connections to HPS) would not be constructed.
Bayview Hunters Point Area Plan		
Policy 1.2: Develop the necessary improvements in public transit to move people efficiently and comfortably between different neighborhoods of Bayview Hunters Point, to and from Candlestick Park Point, and to and from Downtown and other parts of the region.	Consistent. The Build Alternative includes several transit improvements, including the Hunters Point Transit Center, to provide the necessary infrastructure for efficient connectivity between Bayview Hunters Point and the surrounding areas, as well as Downtown.	Not consistent. Under the No Build Alternative, Build Alternative roadway improvements (and associated bicycle, pedestrian, and transit improvements serving the public residing/visiting Bayview Hunters Point, Candlestick Park Point, and to and from Downtown) would not be constructed.
Hunters Point Shipyard Development Plan		
Objective 8: Provide for infrastructure improvements, including: streets and transportation facilities; open space and recreation areas; and utilities for water, sewer, gas, and electricity.	Consistent. The Build Alternative includes several transportation improvements including reconstructing, repaving and limited widening of existing city streets and constructing new street segments to create a multi-modal transportation network. The network would promote expanded bus service, provide new BRT infrastructure to the proposed Hunters Point Transit Center, and create pedestrian and bicycle linkages throughout the community.	Not consistent. Under the No Build Alternative, Build Alternative roadways (and associated connections to HPS) and transit infrastructure such as BRT lanes and the Transit Center would not be constructed.

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
Transportation 2035 Plan for the San Francisco Bay Area		
Drive operational improvements and increase the efficiency of the region's transportation system.	Consistent. The Build Alternative provides the infrastructure for a new BRT line connecting the regional transit hubs to the Project area. The Build Alternative also includes transit preferential street improvements along the Palou Avenue transit corridor and, to a lesser extent, Gilman Avenue. Improvements include bus bulb-out extensions and transit-only lanes to improve the speed and reliability of transit services and complement the limited existing public transit services. The new BRT route would serve residents and business in the Project area. It would travel from the Bayshore Caltrain Station through the BTI Project area to the Hunters Point Transit Center.	Not consistent. Under the No Build Alternative, Build Alternative improvements (and associated bicycle, pedestrian, and transit improvements) would not be constructed. No improvements to existing streets for low-income communities would occur, and mobility options would continue to be limited.
Continue MTC's commitment to provide mobility options for residents in low-income communities.		
Promote walking and biking as viable, safe transportation choices for Bay Area residents.		
Expand the reach and utility of public transportation in the region.		
Bay Trail Plan		
Transportation Access Policy 30: Bridges and roads will be important connections in the Bay Trail System, providing not only commute routes, but enhancing the recreational use of the Trail by creating trail loops which will allow a greater number of people to enjoy the Trail.	Consistent. Several bicycle routes along the BTI Project alignment are part of the San Francisco Bay Trail. The Bay Trail currently follows a portion of Route 805 along Gilman Avenue, Aurelius Walker Drive, and Carroll Avenue. This segment would be converted to a shoreline trail that would circulate along the shore of Candlestick Point and Hunters Point as part of the "Blue Greenway" plan that is being coordinated by the Port of San Francisco.	Not consistent. Under the No Build Alternative, no roadway improvements (and associated bicycle improvements) would be constructed on existing streets.

Table 2.1-1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
San Francisco Bay Plan (BCDC)		
<p>Mitigation Policy 1: Projects should be designed to avoid adverse environmental impacts to Bay natural resources such as to water surface area, volume, or circulation and to plants, fish, other aquatic organisms and wildlife habitat, subtidal areas, or tidal marshes, or tidal flats. Whenever adverse impacts cannot be avoided, they should be minimized to the greatest extent practicable. Finally, measures to compensate for unavoidable adverse impacts to the natural resources of the Bay should be required. Mitigation is not a substitute for meeting the other requirements of the McAtteer-Petris Act.</p>	<p>Consistent. As described in Section 2.3, <i>Biological Environment</i>, the Build Alternative includes avoidance, minimization, and mitigation measures. With the incorporation of these measures, the Build Alternative would have a minimal effect on the natural resources of the Bay.</p>	<p>Consistent. No adverse environmental effects to Bay natural resources would occur.</p>
Bayview Hunters Point Redevelopment Plan		
<p>Objective 7: Facilitating emerging commercial-industrial sectors through facilitating improvement of transportation access to commercial and industrial areas, improvement of safety within the Project Areas, and the installation of needed site improvements to stimulate new commercial and industrial expansion, employment, and economic growth.</p>	<p>Consistent. The Build Alternative includes reconstructing, repaving and limited widening of existing city streets and constructing new street segments to create a multi-modal transportation network. The network would promote expanded bus service, provide new BRT infrastructure to the proposed Hunters Point Transit Center, and create pedestrian and bicycle linkages throughout the community.</p>	<p>Not consistent. Under the No Build Alternative, no roadway improvements (and therefore no additional access) would be constructed to facilitate emerging commercial-industrial sectors through improvement of transportation access and safety.</p>

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
Objective 11: Provide assistance toward the improvement of key transportation routes to meet the needs of alternative transportation modes, industrial trucking operations, and emergency operations.	Consistent. The Build Alternative includes reconstructing, repaving and limited widening of existing city streets and constructing new street segments to create a multi-modal transportation network. The network would promote expanded bus service, provide new BRT infrastructure to the proposed Hunters Point Transit Center, and create pedestrian and bicycle linkages throughout the community. The Build Alternative includes roadway improvements to facilitate goods movement and emergency operational access to the existing and proposed redevelopment areas.	Not consistent. Under the No Build Alternative, no arterial roadway improvements (and therefore no additional routes or alternative transportation modes such as BRT) would be constructed.
San Francisco Bicycle Plan		
<p>A 5-year strategy for implementation and includes other policies and long-term goals to satisfy eight goals to improve conditions for the San Francisco bicycle community:</p> <ul style="list-style-type: none"> • Refine and expand the existing bicycle route network; • Ensure plentiful, high-quality bicycle parking to complement the bicycle route network; • Expand bicycle access to transit and bridges; • Educate the public about bicycle safety; • Improve bicycle safety through targeted enforcement; • Promote and encourage safe bicycling; 	Consistent. Several existing bicycle facilities exist along the Project alignment. The Build Alternative includes some improvements to bicycle facilities and routes including the provision of Class I, II, and III bicycle lanes.	Not consistent. Under the No Build Alternative, Build Alternative roadway (including bicycle facilities) would not be constructed.

Table 2.1.1-2. Consistency with Local Plans and Programs

Policy	Build Alternative	No Build Alternative
<ul style="list-style-type: none"> • Adopt bicycle-friendly practices and policies; • Prioritize and increase bicycle funding. 		
Candlestick Point State Recreation Area General Plan		
Guideline Trails-3: Coordinate trail/route planning, development, and use with the City and County of San Francisco, community and open space organizations, and adjacent landowners to encourage connections between CPSRA and other open space resources, such as Bayview Hill and the recreation areas planned as part of the Candlestick Point-Hunters Point Shipyard Phase II Project.	Consistent. The Build Alternative includes development of Harney Way north of the CPSRA in the Last Port area.	Not consistent. Under the No Build Alternative, no arterial roadway improvements (and therefore no additional routes or alternative transportation modes such as BRT) would be constructed.
Guideline Health-2: Provide a comprehensive trail system to encourage walking, biking, and other activities. Provide access to CPSRA via planned multi modal transportation nodes.	Consistent. The Build Alternative includes development of Harney Way north of the CPSRA in the Last Port area. Improvements provide for multi-modal facilities to support walking, biking, and other activities.	Not consistent. Under the No Build Alternative, no arterial roadway improvements (and therefore no future routes or alternative transportation modes such as BRT) would be constructed.

Avoidance, Minimization, and/or Mitigation Measures

As discussed, the BTI Project would be consistent with local planning goals, policies, and objectives and adverse effects are not anticipated. Therefore, avoidance and minimization measures are not required.

2.1.1.4 PARKS AND RECREATIONAL FACILITIES

Affected Environment

The San Francisco Recreation and Park Department (SFRPD) owns and manages more than 200 parks, playgrounds, and open space areas in the city, as well as recreation centers, swimming pools, golf courses, and other athletic fields (totaling over 4,113 acres of open space and parkland).

PARKS AND RECREATIONAL FACILITIES

The BTI Project study area includes 20 parks and recreational facilities within approximately 0.5 miles of the Build Alternative alignment, shown in Table 2.1.1-3 (see Figure 2.1.1-1). Of these 20 parks, seven parks and/or recreational facilities (in gray in Table 2.1.1-3) are within or immediately adjacent to project limits and are described in more detail below. These are the CPSRA, Gilman Park (Playground), Bayview Hill Park and Open Space, Candlestick Park (stadium), India Basin Shoreline Park, the Herons Head Park and EcoCenter, and the San Francisco Bay Trail which traverses a portion of Heron's Head Park and the CPSRA as well as along the Bay shoreline. None of the recreational facilities listed are subject to the National Trails System Act (P.L. 90-543, as amended through P.L. 109-418) or the Park Preservation Act.

Table 2.1.1-3. Parks and Recreation Areas Within 0.5 miles of the BTI Project

Park	Location	Approximate Size	Uses	Management
1. Candlestick Point State Recreation Area (CPSRA)	Along the shoreline of Harney Way, around Candlestick Point, and around Hunters Point Shipyard	150 acres	Passive and active recreational uses, including but not limited to picnic, trails, fishing, windsurfing, etc.	State Parks
2. Gilman Park/ Playground	Gilman Avenue and Griffith Street	5 acres	Playground, ballfield, meeting or event room	SF Department of Real Estate
3. Little Hollywood Park	Lathrop Avenue and Tocoloma Avenue	1 acre	Basketball courts, open space	SF Recreation and Parks Department
4. Silver Terrace Playground	Terminus of Waterville Street	5 acres	Ballfields, tennis court, basketball court, playground	SF Recreation and Parks Department
5. Bayview Hill Park and Open Space	Key Avenue /Jamestown Avenue	44 acres	Open space, parking area	SF Recreation and Parks Department
6. Bay View Park/ K.C. Jones Playground	3rd Street and Armstrong Avenue	5 acres	Playground, ballfield, pool, basketball courts	SF Recreation and Parks Department

Table 2.1.1-3. Parks and Recreation Areas Within 0.5 miles of the BTI Project

Park	Location	Approximate Size	Uses	Management
7. Adam Rogers Park	Ingalls Street and Oakdale Avenue	3 acres	Basketball court, playground	SF Recreation and Parks Department
8. Ridgetop Plaza	Whitney Young Circle	0.3 acres	Open plaza, 1 basketball hoop, playground	SF Department of Real Estate
9. Earl P. Mills Neighborhood Center	100 Whitney Young Circle	Building and playground	Playground, community center, auditorium	SF Department of Real Estate
10. Hilltop Park	LaSalle and Whitney Young Circle	3 acres	Open space, picnic area	SF Recreation and Parks Department
11. Joseph P. Lee Recreation Center	1395 Mendell Street	Building and playground	Gym with basketball court, tennis courts, playground	SF Recreation and Parks Department
12. Hunters Point /Milton Meyer Recreation Center	195 Kiska Road	Building and associated fields	Tennis courts, gymnasium, meeting spaces, ballfield, playgrounds	SF Recreation and Parks Department
13. Palou and Phelps Park	Palou Avenue and Phelps Street	3 acres	Playground, open space	SF Recreation and Parks Department
14. Youngblood-Coleman Playground and Recreation Area	Galvez Street and Mendell Street	6 acres	Soccer field, ball field, basketball court, tennis courts, playground	SF Recreation and Parks Department
15. Selby and Palou Mini-Park	Palou Avenue and Selby Street and Quesada Avenue	0.5 acres	Playground, picnic area	SF Recreation and Parks Department
16. LeConte Mini-Park	845 Meade Street	0.5 acres	Open area	SF Recreation and Parks Department
17. Candlestick Park (Stadium)	490 Jamestown Avenue	Building	Stadium	SF Department of Real Estate
18. San Francisco Bay Trail	Through Heron's Head Park and CPSRA	Trail (500 miles when completed)	Multi-use trail, some parts within existing roadway system	Association of Bay Area Governments
19. India Basin Shoreline Park	Innes Avenue and Hunters Point Boulevard	12 acres	Playgrounds, picnic areas, shore access.	SF Recreation and Parks Department

Table 2.1.1-3. Parks and Recreation Areas Within 0.5 miles of the BTI Project

Park	Location	Approximate Size	Uses	Management
20. Heron's Head Park and EcoCenter	Cargo Way and Jennings Street, near India Basin Park	24 acres	Open space and EcoCenter educational facility	Port of San Francisco
Source: San Francisco Recreation & Parks webpage http://sfrecpark.org , accessed February 2012; HNTB, 2011, updated 2012 California Department of Parks and Recreation webpage http://www.parks.ca.gov/MediaGallery/?page_id=519&m=brochures .				

Candlestick Point State Recreation Area (CPSRA) - The CPSRA is located on the western shoreline of the San Francisco Bay, at the southern tip of the Bayview Hunters Point Area and comprises approximately 150 acres. CPSRA was acquired by the State in 1977 for development as a State recreation area and is the State's first and only urban state park. The southern portion of the park is the most developed and actively used area while the northern areas are unimproved and underutilized. The southern portions of CPSRA include picnic areas, a fitness course, a bicycle and (nature) walking path (including portions of the San Francisco Bay Trail [Bay Trail]) and shoreline access to the Bay for water-dependent recreation. CPSRA land to the north and east of the Candlestick Park stadium are currently used for stadium parking.

In 2009, the Legislature, through Senate Bill 792, created the framework for the redevelopment of Candlestick Point and the former Hunters Point Shipyard, including the reconfiguration of the CPSRA. The Legislature authorized a pair of agreements (the Park Reconfiguration Agreement and the Trust Exchange Agreement) between several public agencies, including State Parks, State Lands Commission and the San Francisco Redevelopment Agency (SFRA), under which State Parks will transfer approximately 20 net acres of land, which consists of parking lot areas and areas covered in rubble or sparse vegetation, to the City of San Francisco Office of Community Investment and Infrastructure in exchange for park funding, as well as lands in other areas to become a part of the CPSRA.

Under this pair of agreements, a portion of the CPSRA adjacent to Harney Way will be transferred to the City for proposed transportation improvements, including the BTI Project. The Transfer Area (discussed under *Transfer Area* in Appendix A) adjacent to Harney Way and affected by the BTI Project is shown in Figure A-2a and A-2b. The existing State Parks General Plan for the CPSRA (as revised in January 2013) is consistent with the agreements between the State and City of San Francisco for a reconfigured CPSRA.

Under the Park Reconfiguration Agreement and Trust Exchange Agreement, State Parks will receive \$50 million for the CPSRA for operations and maintenance, park improvements, and transfers of land near the shoreline. These funds will come to State Parks over time as the State transfers land to the City in four phases concurrent with redevelopment of adjacent lands at Candlestick Point. At each phase, State Parks will receive a portion of the total \$50 million, in proportion to the acreage transferred to the City at that time. As State Parks receives these funds, the first \$10 million will be

allocated to fund operations and maintenance; the next \$40 million will fund improvements.

The CPSRA and some of the parks listed below are also described in greater detail in Appendix A, *Section 4(f)*.

Gilman Park/Playground – Located next to Candlestick Park, the Gilman Playground is a 5-acre park that includes a sandy playground with climbing structures, a baseball field, and a basketball court. There is also a recreation center that offers afterschool activities and can be reserved for events. This facility is managed by the San Francisco Department of Real Estate. The park can be accessed via Gilman Avenue, Giants Drive, or Ingerson Avenue.

Bayview Hill Park and Open Space – Bayview Hill Park is a 19-acre public park within a larger 44-acre open space area located on a hill that rises approximately 440 feet above the San Francisco Bay to the west of Candlestick Park stadium. The park encompasses a hilltop that features 360-degree views of San Francisco, the San Francisco Bay, Candlestick Park, and the CPSRA. The park and open space area is considered a Significant Natural Resource Management Area by the SFRPD and receives some active management of habitat. Visitor facilities include paved and gravel walking trails within an extensive natural habitat area. Access to the park is by way of Key Avenue from the west side of the park.

Candlestick Park (Stadium) – The Candlestick Park Stadium and parking lot are located north of Jamestown Avenue and west of Hunters Point Expressway. The stadium and parking lot are owned by the City and leased to the San Francisco 49ers National Football League (NFL) team. The entire site is 83 acres in area, of which 14.5 acres is covered by the stadium; the remainder is parking and other ancillary areas. The stadium and associated facilities are designated as city parkland, but are not used as park space and are generally not available for public use on non-game days. Therefore, Candlestick Park is not considered a Section 4(f) resource.

India Basin Shoreline Park – India Basin Shoreline Park is a 12-acre park on the India Basin shoreline, north of Innes Avenue. The park is managed by the San Francisco SFRPD and includes two children's playgrounds, a basketball court, picnic areas, recreational trails, and shoreline access to the Bay for water-based recreation. Access to the park is from Hunters Point Boulevard, and there is a parking area off Hawes Street. In general, recreational uses in the park are concentrated near the shore and away from the roadway.

Heron's Head Park – Heron's Head Park and EcoCenter includes open space (marsh, ponds, mudflats) and the EcoCenter educational facility, just east of the intersection of Cargo Way and Jennings Street. Various trails lead to the park, which is managed by the Port of San Francisco. Access to the park is via Cargo Way and Jennings Street and in general recreational uses are concentrated near the shoreline and away from the roadway. Within the park and along the shoreline is a portion of the Bay Trail (discussed as follows).

San Francisco Bay Trail – The Bay Trail is a planned recreational corridor that, when complete, will encircle the San Francisco and San Pablo bays. The Bay Trail is administered by the Association of Bay Area Governments (ABAG). Portions of the Bay



**Figure 2.1.1-1
Parks and Recreation Areas**

Trail traverse within the CPSRA (including the Last Port area south of Harney Way, adjacent to Hunters Point Expressway, and along the shoreline). Approximately 2.7 million people live within 2 miles of the Bay Trail, a number that will increase to 2.9 million by the year 2020 (ABAG 2012).

The Bay Trail is also discussed in Appendix A, *Section 4(f)* section and in the Pedestrian and Bicycle Routes and Facilities section (discussed as follows).

In addition to the parks and recreational facilities specifically described above, recreational uses in the larger Project area include community centers (i.e., Hunters Point/Milton Meyer Recreation Center), pools, tot lots, and gardens, however as these are not along the BTI Project alignments; they are not anticipated to be affected by the Project.

PEDESTRIAN AND BICYCLE ROUTES AND FACILITIES

In addition to parks and recreational facilities, several existing bicycle facilities are located in the BTI Project area. These facilities include municipal routes that are part of the San Francisco Bicycle Network, and existing and planned regional routes that are part of the Bay Trail system.

The following bicycle routes exist in the Project area:

- North-South Route 5 runs along Bayshore Boulevard, Third Street, Illinois Street, and The Embarcadero between Visitacion Valley and North Beach. In the Project area, this route is a Class III facility.
- North-South Route 7 runs between Mariposa Street and Carroll Avenue via Indiana Street, Third Street, Phelps Street, Palou Avenue, and Keith Street. It is a Class III facility, but wider travel lanes that allow bicyclists to ride outside the path of vehicle travel are provided on Keith Street and sections of Indiana and Phelps Streets. Route 7's southern terminus is at Keith Street and Carroll Avenue at the Bay View Playground.
- North-South Route 25 runs between southeastern San Francisco and the Marina District. Within the Project area, Route 25 runs along Bayshore Boulevard as a Class II facility. North of the Project area, it runs as both a Class II facility (e.g., along Potrero Avenue, Harrison Street, 11th Street, and portions of Polk Street) and Class III facility (e.g., along 10th Street and portions of Polk Street).
- East-West Route 60 is a cross-city route from Great Highway and Vicente Street to Cesar Chavez and Illinois Streets. In the Project area, it is a Class III facility along Cesar Chavez Street between Mississippi Street and Bayshore Boulevard. It is a Class II facility between Mississippi and Illinois Streets.
- East-West Route 68 runs from the Innes (north) gateway to the Hunters Point Shipyard along Innes Avenue, Hunters Point Boulevard, and Evans Avenue to Cesar Chavez Street along various bicycle facilities. This route has dedicated bicycle lanes (i.e., a Class II facility) along both sides of Hunters Point Boulevard between Innes Avenue and Evans Avenue and along Evans Avenue east of Third Street. This route has shared auto-bicycle lanes (i.e., Class III facility) on both sides along Innes Avenue between the Innes (north) gateway and Hunters Point Boulevard and along Evans Avenue west of Third Street.

- East-West Route 70 runs along Palou Avenue, Silver Avenue, and Monterey Boulevard as a Class III facility. The eastern terminus of this route is currently the Crisp (south) gateway at Griffith Street and Palou Avenue.
- Connector Route 170 runs along Oakdale Avenue between Third Street and Bayshore Boulevard. This route has bicycle lanes (i.e., a Class II facility) on both sides of the street between Third Street and Bayshore Boulevard.
- Connector Route 805 provides a connection between Beatty Road at Tunnel Avenue (near Caltrain's Bayshore Station) in Brisbane and Third Street at Carroll Avenue in the Bayview Hunters Point area. This route is a Class III facility around Candlestick Park at the CPSRA via Harney Way, Hunters Point Expressway, Gilman Avenue, Arelious Walker Drive, and Carroll Avenue. A portion of Route 805 is designated as part of the Bay Trail.
- The Bay Trail is a planned recreational corridor that, when complete, will encircle the San Francisco and San Pablo bays. The Bay Trail will run along the shoreline of Candlestick Point and Hunters Point as part of the "Blue Greenway" plan that is being coordinated by the Port of San Francisco.

Environmental Consequences

Under the No Build Alternative, Harney Way is planned for development to accommodate future traffic by other development projects. Therefore in this location, the No Build Alternative will generate the same impacts as the Build Alternative described below. Otherwise, the No Build Alternative is not anticipated to result in any adverse effects to parks and recreational facilities (including pedestrian or bicycle trails) in the BTI Project area.

Of the parks and recreation areas listed above in Table 2.1.1-3, only the following are within or adjacent to the areas where BTI Project construction would occur:

- Bay Trail
- Candlestick Point State Recreation Area
- India Basin Shoreline Park
- Gilman Playground
- Candlestick Park (Stadium)
- Candlestick Point/Hunters Point Shipyard Development Plan Wedge Park
- Bayview Hill Park and Open Space

The BTI Project includes rehabilitation/reconstruction of some roadways on which the Bay Trail is planned or traverses (including Alana Way (planned), Harney Way west of CPSRA (planned), and Illinois Street).² On Illinois Street and Cargo Way, the Bay Trail is shared-use with the roadway, and is not considered a Class I facility.³ Improvements on these streets would occur within the existing ROW and access and use of the Bay Trail would be equal to or improved compared to existing conditions. Further, the BTI Project

² Personal communication with Maureen Gaffney, ABAG, November 7, 2012.

³ Bicycle network classes as defined by the San Francisco Metropolitan Transit Agency (SFMTA), <http://www.sfmta.com/cms/bcomm/3180.html>.

would not impede future development of the planned portions of the Bay Trail on either Alana or Harney Way.

As part of the transfer agreements, both the No Build and the Build Alternative would permanently develop 1.3 acres of CPSRA land known as the "Last Port" adjacent to Harney Way for new ROW. This land, which constitutes 8.3% of the "Last Port" and 0.008% of the entire CPSRA, currently includes trees, brush and ruderal vegetation, utility infrastructure, part of an unpaved trail, part of an overcrossing and a part of a small natural surface parking lot (16 out of 32 spaces). There would be replacement in kind of vegetation and trees along the park boundary and coordination with State Park future plans for construction of a Class I commuter trail and reconfiguration of the parking lot. Upon completion of the land transfers and facilities improvements, the CPSRA will provide substantially more improved parkland and water access. Moreover, with implementation of the avoidance, minimization, and/or mitigation measures described below, the Build Alternative would not adversely affect the activities, features or attributes of the CPSRA or the "Last Port" area of the CPSRA.

The portion of the Bay Trail within the CPSRA and Heron's Head Park would not be affected by the BTI Project.

Changes to bicycle facilities and routes are proposed as part of the BTI Project for Routes 60, 68, and 805:

- On Cesar Chavez Street east of US-101 to Illinois Avenue, the San Francisco Municipal Transportation Agency (SFMTA) is proposing the improvement of pedestrian/bicycle facilities. As currently envisioned, Route 60 would be improved in this segment to consist of a Class I bikeway and existing sidewalks would be improved. As part of the BTI Project, a cantilevered structure would be added along the south side of Cesar Chavez Street in the vicinity of the Evans Avenue intersection. This new structure would provide sufficient width to accommodate a Class I bikeway and improved pedestrian facility. The new cantilevered structure would be on City and County of San Francisco (County) right-of-way.
- On Hunters Point Boulevard between Evans Avenue and the Innes Avenue, a bicycle lane (Class II) would be reconstructed in each direction. On Evans Avenue between Cesar Chavez Street and Hunters Point Boulevard and on Innes Avenue between Hunters Point Boulevard and the Innes (north) gateway to the HPS, a bicycle lane (Class II) would be constructed in each direction. These segments are part of Route 68.
- On Gilman Avenue between Donahue Street (a proposed street east of Arelious Walker Drive) and Arelious Walker Drive, a bicycle lane (Class II) would be provided in each direction. This segment is part of Route 805. On Alana Way between US-101 and Harney Way, a bicycle lane (Class II) would be provided in each direction. On Harney Way between Alana Way and Jamestown Avenue, a bicycle lane (Class II) would be provided on the north side of the roadway. These segments are also part of Route 805.
- Route 805 would be removed in two places: on Carroll Avenue between Arelious Walker Drive and Jennings Street, and on Arelious Walker Drive between Gilman and Carroll Avenues. It would be relocated to Gilman Avenue between Arelious Walker Drive and Jennings Street, and to Jennings Street between Gilman and

Carroll Avenues. On Carroll Avenue, the relocated route would be a signed route only (Class III), similar to the existing conditions for this route.

All other properties listed in this analysis would not be permanently affected by the BTI Project because there would be no direct use. For other parks and recreational facilities, the Build Alternative would not change the visual setting within or adjacent to the parks or recreation facilities. According to the NSR, receptors modeled near affected parks and recreational facilities, would not experience perceptible increases in noise that differ when comparing the Build and No Build scenarios. Sounds levels would remain within acceptable limits for an urban parks and recreational facilities.

In addition to the permanent impacts described above, air quality construction period measures (refer to 2.2.5 *Air Quality*) and measures to minimize noise effects would be implemented (refer to Section 2.2.6, *Noise*) during construction. Continuity of the Bay Trail on Illinois Street and Cargo Way would be maintained throughout construction, and mitigation and minimization measures as set out below will be provided to maintain access and limit disruption to facilities. Parks and recreational facilities are anticipated to continue to function as they currently do upon completion of construction.

Section 4(f)

The Section 4(f) implications of the project are discussed in detail in Appendix A. In summary:

- Under the Build Alternative, development of Harney Way would generate a “*de minimis*” Section 4(f) impact on park/recreation facilities of the CPSRA.
- Because the Build Alternative has no permanent effect on the Bay Trail and continuity of the trail will be maintained during construction, Section 4(f) is not triggered by the project’s effects on the Bay Trail.
- The other parks, recreational facilities, and pedestrian/bicycle facilities listed in this chapter are also considered Section 4(f) resources. However, with the avoidance and minimization measures listed below, there would be no work within or near the boundaries of these facilities that would trigger the provisions of Section 4(f).

Avoidance, Minimization, and/or Mitigation Measures

The following measures are proposed to minimize harm to parks and recreational facilities (including Section 4(f) property) during construction.

- During construction, the contractor shall provide for such local access by phasing of operations, bridging, or employing other procedures as approved by the City Representative. This would include limiting the working hours to between 8 a.m. to 5 p.m., if required. Access to CPSRA via the Harney Way Parking lot will be maintained at all times, will be coordinated with State Parks, and in the event access to the CPSRA is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular, bicycle, and pedestrian access. The City (San Francisco Department of Public Works or DPW) will also assign a public information officer to the BTI Project who will work with the community to reduce any other construction impacts of the BTI Project.
- The temporary construction zone(s) will be fenced to ensure the exclusion and safety of park visitors.

- In the event that any inadvertent damage occurs to the parklands or facilities at CPSRA, the property will be restored to the condition that existed prior to the construction activities or better.

The following additional measures apply to the CPSRA Section 4(f) property.

- Prior to construction, the City will coordinate with State Parks to ensure provision of access to pedestrian/bicycle paths in the Last Port area of the CPSRA. This may include but is not limited to trail detours and signage to reroute park users to alternate unpaved trails and to the Bay Trail along the shoreline as well as other available parking. The City will also relocate the picnic table and windscreen to another suitable area of CPSRA as specified by State Parks.
- Prior to construction, the City will coordinate with State Parks to ensure provision of adequate parking in the Last Port area of the CPSRA including the permanent expansion of the existing parking lot to the south, west, and east, to provide an equivalent parking area. If necessary, signage during construction will direct drivers to additional parking available along Jamestown Avenue, Hunters Point Expressway, or to the Donner Avenue CPSRA lot.

Following BTI Project construction on Harney Way, the CPSRA will continue to function as it does currently and conditions and access to recreational facilities and transit options in the area of land transfer within the CPSRA and adjacent to Harney Way will be equivalent or better than existing conditions.

2.1.2 GROWTH

2.1.2.1 REGULATORY SETTING

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, requires evaluation of the potential environmental consequences of all proposed federal activities and programs. This provision includes a requirement to examine indirect consequences, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as secondary impacts. Secondary impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

Caltrans guidance for growth-related effects was used in arriving at the conclusions in this section.

2.1.2.2 AFFECTED ENVIRONMENT

Growth rates and patterns are influenced by various local, regional, and national influences that reflect ongoing social, economic, and technological changes. Ultimately, the amount and location of population growth and economic development that occurs in a specific area is controlled to some extent by local and county governments through zoning, land use plans and policies, and decisions regarding development applications.

The Land Use Element of the Bayview Hunters Point Area Plan contains land use designations and policies which guide development in the BTI Project area. These designations and policies are contained within the *San Francisco General Plan* as well as the *Bayview Hunters Point Area Plan*, adopted with amendments in 2010. The existing land uses within the study area reflect the City's zoning maps, but future development and redevelopment uses are intended to follow the guidelines and policies of the *Bayview Hunters Point Area Plan*. The *Bayview Hunters Point Redevelopment Plan* (2006) was created in an effort to revitalize the Bayview Hunters Point area. This plan is meant to guide the City's policies and the San Francisco Redevelopment Agency's (SFRA) redevelopment in the Bayview Hunters Point area.

Local government and other regional, state, and federal agencies also make decisions about infrastructure (e.g., roads, water facilities, and sewage facilities) that may influence growth rates and the location of future development.

Transportation infrastructure is one component of the overall infrastructure that may serve to accommodate planned growth. This infrastructure also may serve to hasten or shift planned growth, or to encourage and intensify unplanned growth in an area. Transportation projects may induce growth when they directly or indirectly promote, hasten, shift, or intensify planned growth or encourage unplanned growth in a community or region. Examples of growth-inducing transportation projects are construction of a new interchange on an existing freeway, which could shift and encourage growth in the vicinity of the new interchange, and construction of a new roadway through an undeveloped area, which could promote unplanned growth.

2.1.2.3 ENVIRONMENTAL CONSEQUENCES

"First-cut screening" for the BTI Project was conducted to determine if further analysis is required with respect to growth.

Changes in Accessibility

As described in Chapter 1, *Proposed Project*, the purpose of the BTI Project is to improve traffic operations to accommodate approved planned growth and develop a more direct access route from US 101 and I-280 to the Candlestick Point and HPS areas. The BTI Project includes improvements to the existing transportation network and improvements to transit accessibility. Therefore, by its very nature, the BTI Project would result in changes to accessibility (but not "new" accessibility to areas and destinations that do not exist under the No Build Alternative). This would include increased transit accessibility to/from residential neighborhoods, as well as direct transit access to/from downtown and other job centers.

Although, the BTI Project would improve traffic operations, it would not increase or affect freeway capacity.

Potential to Influence Growth

Potential growth is driven by the availability of land to develop and by market forces. The study area is in a geographic location that has features which have historically constrained growth. These factors include physical (natural) constraints such as Bayview Hill, Hunter's Point Ridge (also known as Stony Hill), and the San Francisco Bay, as well as existing built structures.

Within the Project area land available for development is primarily Candlestick Point (currently stadium and parking areas) and the HPS which is being released by the Federal Government to the City. Under the No Build Alternative (which assumes CP-HPS Plan buildout, minus the elements included in the BTI Project), these areas would be developed. In the No Build Alternative, the study area is expected to (over existing conditions) experience growth of approximately 7,000 new housing units, and 9.8 million square feet of non-residential development. With these developments, there would be no other lands available for redevelopment in the CP-HPS Plan area. Whether the BTI Project has the potential to influence growth can be split into two questions:

- Does the BTI Project have potential to influence growth at the City or regional level? and
- Does the BTI Project have potential to influence growth within the CP-HPS Plan/Bayview area?

Through its CEQA analysis, the CP-HPS Plan considered whether the Plan as a whole would be growth-inducing. The conclusion was reached that the CP-HPS Plan would not generate growth inducing impacts because the plan aims to adopt a land use designation in line with approved plans, not encourage growth in project areas beyond those already planned, and implement a series of smart growth principles.⁴ For instance, the CP-HPS Plan would establish a land use designation for the project areas and

⁴ The smart-growth principles that the CP-HPS Plan would implement are outlined in Chapter V of the CP-HPS Phase II Development Plan EIR. Smart-growth principles encourage working and living in the same area to limit vehicle miles traveled, transit-oriented development, transit connectivity to other areas of the City, multimodal amenities, and different types of recreational areas to serve the community.

specify land uses consistent with the approved land use and development plan outlined in the Bayview Hunters Point Area Plan and the General Plan. In addition, surrounding CP-HPS areas are not vulnerable to indirect or leapfrog development because the surrounding areas are built out or are the subject of planned future developments. Also, the CP-HPS Plan would not encourage additional local growth beyond that already planned by connecting new on-site infrastructure to the existing City system and not expanding infrastructure to geographic areas that were not previously served. Lastly, the CP-HPS Plan would implement smart growth policies to limit its indirect growth-inducing impacts (San Francisco Redevelopment Agency 2010).

Since the principle elements of the BTI Project formed part of the CP-HPS Plan, and there has been no relevant circumstantial change since this time, this analysis can be used to support a conclusion that BTI does not have potential for growth-inducing impacts at the City or regional level. As indicated above, under the No Build Alternative, growth as a result of the CP-HPS Plan (development of new residential, commercial, and supporting infrastructure) and other past, present, and reasonably foreseeable plans and projects in the RSA would directly result in growth through the development of housing, supporting retail, and commercial businesses. Future growth from each of these projects is planned and accounted for in existing zoning.

Under the Build Alternative, no additional housing or non-residential development would be constructed. Improvements would be limited to transportation and transportation-supporting infrastructure (refer to Chapter 1). The BTI Project would increase accessibility to and through the Project area. Since part of the purpose of the BTI Project is to improve traffic operations within the BTI Project area to accommodate approved planned growth, then by its nature, the BTI Project will encourage growth. However, this growth is already planned and considered under the No Build Alternative. The question is whether the BTI Project would alter the location, type, amount and timing of growth in relation to the No Build Alternative.

LOCATION

Potential locations for growth are limited to areas that are undeveloped or developed lands that are anticipated/planned for redevelopment. In the Project area, these include the Candlestick Point and HPS areas, CPSRA, and City Parks. The CP-HPS Plan sets out a comprehensive land-use framework for the Project area which does not include any future land banks. Under both the No Build and the Build Alternatives, Candlestick Point and HPS are anticipated to be fully developed. The Plan also includes the preservation of undeveloped areas of open space such as the CPSRA. By improving accessibility to and through the Project area, the BTI Project would increase accessibility to these areas which are planned to remain undeveloped such as CPSRA and City Parks. However, given the regulations protecting parkland and recreation areas (i.e., Section 4(f) and Section 6(f)), growth in these non-developed areas is not reasonably foreseeable. There is no evidence to suggest that the BTI Project would affect the location of growth over and above the No Build Alternative.

TYPE, AMOUNT AND TIMING

As indicated in Section 1.3.3.1, absent of the BTI Project, the remainder of CP-HPS Plan could move forward. The year 2035 No Build Condition in the BTI Project TIS analyzed this scenario and shows that redevelopment would not be dependent on BTI Project improvements. The CP-HPS Plan includes five redevelopment options (types of growth), or project variants, depending on whether a stadium at HPS is constructed. As shown in

Table 2.1.2-1, if a stadium is constructed at HPS three variants are considered: Candlestick Point Tower, Utility, or 49ers/Raiders Shared Stadium. If no stadium is constructed at HPS, then Research and Development or Housing variants are considered. The variants' features are similar to the CP-HPS Plan features (San Francisco Redevelopment Agency 2010).

Table 2.1.2-1. CP-HPS Plan Variants	
	Description
CP-HPS Plan	
Project	702 acres, mixed use community with a wide range of residential, retail, office, research and development civic and community uses, and parks and recreation open space. A major component would be a new stadium for the San Francisco 49ers team. Additionally, new transportation and infrastructure would serve the project including a bridge across Yosemite Slough and transportation/transit improvements to internal street networking/grid in Hunters Point Shipyard and Candlestick Point.
CP-HPS Plan Variants – With Stadium	
Candlestick Point Tower	Assumes different locations and heights of residential towers at Candlestick Point.
Utility	Assumes the implementation of additional on-site utility infrastructure, but all land uses at Candlestick Point and the HPS Phase II site would be constructed as the same locations and at the same intensities proposed with the project.
49ers/Raiders Shared Stadium	Assumes that development would occur exactly as proposed for the project, except that the new stadium would be home to both the San Francisco 49ers and the Oakland Raiders.
CP-HPS Plan Variants - No Stadium	
Additional Research and Development	Assumes 49er Stadium would not be constructed and instead, additional research and development uses would be developed at HPS Phase II.
Housing	Assumes 49er Stadium would not be constructed, and instead, housing would be relocated to the HPS Phase II site.

Within the CP-HPS Plan, a BTI Project was envisioned which would accommodate these different alternatives/variants and there is no evidence to suggest that the BTI Project would be an influence on pursuing one option over another. The primary factors in influencing the type of growth set out by the CP-HPS Plan, including the potential for a new stadium and the variants involved in a non-stadium option, are 1) developer initiative based on market demand, land development costs and ease of regulatory compliance; 2) the decision by the San Francisco 49ers to develop a stadium in Santa Clara due to open in 2014, 3) the requirement that the City keep an option open to the 49ers for a new stadium on HPS till January 2015.

The amount of growth is prescribed in CP-HPS Plan and other development projects (refer to Table 2.1.1-1). The CP-HPS Plan envisioned a 19-year build-out program which is not yet underway. Given the amount of growth already envisioned, the recent adoption of the CP-HPS Plan and current economic conditions (San Francisco Redevelopment Agency 2010), pressure to exceed this amount of growth is not reasonably foreseeable. Notwithstanding this, it should be acknowledged that improved transportation infrastructure may have an influence on the desirability to redevelop, while recognizing that this is a secondary influence compared to market demand, regulatory constraints and development costs. Therefore, while it cannot be reasonably foreseen that the BTI Project would have any influence on the overall amount of growth, it can be concluded that there is a potential influence on the timing of growth compared to the No Build Alternative.

Potential to Affect Resources of Concern

The Project area is highly urbanized. Redevelopment planning envisions preservation and redevelopment of existing neighborhoods, creation of new communities integrated into the fabric of San Francisco. The resources of concern addressed are primarily socioeconomic, e.g., preservation of neighborhoods, addressing environmental justice community concerns, creating economic opportunities, and increasing the housing stock in the City of San Francisco. Natural and physical resources are primarily related to the shoreline and park areas.

The BTI Project would only have a potential influence on one of several factors affecting the timing of growth in the CP-HPS Plan area, namely accessibility, and no other factors of growth. Therefore, it would not be reasonably foreseeable to expect any appreciable direct or indirect adverse impacts on resources of concern resulting from the BTI Project in relation to the No Build Alternative.

2.1.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The Build Alternative is not anticipated to affect the location, type or amount of growth in comparison to the No Build Alternative. It only has the potential to have some influence on the timing of growth. As there are no adverse effects on resources of concern, no avoidance, minimization, and/or mitigation measures are required.

2.1.3 COMMUNITY IMPACTS

2.1.3.1 COMMUNITY CHARACTER AND COHESION

Regulatory Setting

NEPA established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 USC 4331(b)(2)]. The Department, as assigned by FHWA, in its implementation of NEPA [23 USC 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion and the availability of public facilities and services.

Affected Environment

Information in this section was drawn from the CIA Technical Memorandum that was prepared for the proposed BTI Project (April 2012). Eleven census tracts (230.01, 230.03, 231.02, 231.03, 232, 233, 234, 610, 612, 9806, and 9809) were used to compile data for the 4.8-square-mile area generally bounded by Cesar Chavez Street, US 101, San Francisco Bay, and the San Francisco/San Mateo County line. These census tracts adequately define the study area for the social environment of the BTI Project area.

POPULATION

According to the 2010 U.S. Census, the population of the study area was approximately 35,896, representing 4.4% of San Francisco's 805,235 residents. No growth projections are available for the study area. According to ABAG's Projections 2009, San Francisco, which includes the study area, is projected to grow by 20% between 2010 and 2035.

RACE AND ETHNICITY

An ethnic profile of the existing population is derived from 2010 U.S. Census data. The ethnic categories used are White, Black or African American, Hispanic or Latino of Any Race, Asian, American Indian and Alaska Native, Native Hawaiian or Other Pacific Islander, Some Other Race, and Two or More Races.

The racial characteristics of the study area, which are presented in Table 2.1.3-1, reflect a population that is largely African American and more ethnically diverse than the City as a whole. African Americans account for 31.4% of the area population, and Asians and Hispanics account for approximately 56.5% of the remaining area residents. The population of African Americans within the study area account for approximately 24.1% of the total African American population within the City.

Table 2.1.3-1. Ethnic Composition

Area	Percent of Total Number of Persons							
	Non-Hispanic							Hispanic or Latino of Any Race
	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	
California	40.1	5.8	0.4	12.8	0.3	0.2	2.6	37.6
San Francisco City and County	41.9	5.8	0.2	33.0	0.4	0.3	3.2	15.1
Project Area	6.1	31.4	0.3	32.2	2.5	0.2	3.1	24.3

Source: 2010 U.S. Census data.

INCOME

In 2010, the average household size in the Project area was larger than in the city and the state as a whole. In the Project area, household size averaged 3.5 persons per household compared to 2.26 in all of San Francisco and 2.90 statewide. Household incomes in the Project area however, did not compensate for the larger household size. The census tracts within the BTI Project area had a range of estimated median household income (in 2009 dollars) from \$20,018 (census tract 231.03) to \$149,914 (census tract 9809). The lower end of median incomes is substantially lower than the median incomes in San Francisco and statewide (refer to Table 2.1.3-2). In 2010, the number of individuals living below the poverty level⁵ in the Project area accounted for approximately 6 percent of the countywide total. The number of families living below the poverty threshold in the study area made up approximately 7.5% of the countywide total.

Table 2.1.3-2. Household Income and Percent of Low-Income Populations

Area	Population	Average Number of Persons per Household	Median Household Income	Percent of Families below Poverty Level	Population below Poverty Level	Percent of Individuals below Poverty Level
California	37,253,956	2.90	\$60,392	9.8	4,917,522	13.2
San Francisco	805,235	2.26	\$70,040	7.0	92,602	11.5
Project Area	35,896	3.5	\$20,018-\$149,914 ^a	18.3	6,986	19.5

Source: U.S. Census Bureau 2009, 2010.

^a The median household income is presented as a range in the BTI Project area from the census tract with the smallest income to the census tract with the highest income. Refer to Appendix C of the CIA for the median household income in each census tract.

⁵ The US Census Bureau uses a set of money income thresholds that vary by family size and composition to detect who is poor. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being "below the poverty level".

COMMUNITY COHESION/NEIGHBORHOOD CHARACTERISTICS

Bayview Hunters Point is a predominately industrial and residential district. Historically, it has been the location of the City's heaviest industries, some of the poorest residents, and the greatest concentration of public housing. After World War II, the community had one of the highest home-ownership rates in the City and the population was predominately African-American. Due to the increase in real estate prices over the past 25 years in San Francisco, and because of a deteriorating employment situation of many Bayview residents, it is becoming increasingly difficult to buy housing in the area. Home ownership rates are falling and Bayview's African American population is decreasing. In 1980, African Americans were 73% of the Bayview population. By 1980, the population decreased to 62% and by 2000 the population decreased further to 48% (City and County of San Francisco 2010, as amended).

Bayview Hunters Point is comprised of smaller residential areas, many of which are defined by their geographic features. From south to north, these neighborhoods include Executive Park, Bayview Hill, Candlestick Point, South Basin, Silver Terrace, Town Center (Third Street), Northern Industrial, Central Bayview, Hunters Point Hill, India Basin, and Hunters Point Shoreline. The BTI Project alignment traverses or adjoins all of these neighborhoods except Silver Terrace. The Bayview Hunters Point area has many attributes of a small town with multi-generational families, a strong-faith based leadership, central gathering places (Southeast Community Center), and annual traditions such as the Earth Day celebration.

The "sense of place" felt by residents is very much related to its neighborhood landmarks such as the Bayview Opera House, familiar icons such as corner markets, and physical attributes such as shoreline frontages and expansive views of San Francisco Bay. The 49ers football stadium on Candlestick Park is not considered a neighborhood landmark or a community focus as it is a regional facility.

The heart of Bayview Hunters Point is Third Street. The Third Street commercial core is lined with local serving commercial retail interspersed with civic and religious institutions, as well as upper-floor residential uses. The Third Street Light Rail Project focused on the revitalization of the neighborhood commercial core.

Residential neighborhoods extend from the central corridor of Third Street. Older industrial areas form edges to the north and east, and they are interspersed with pockets of residential uses in the south-central portion of the community. The industrial and residential edges and mix of uses have contributed to critical environmental concerns in the community, including contaminated lands and auto/truck traffic and noise, safety, and air quality concerns associated with truck traffic in residential neighborhoods.

The Bayview Hunters Point area is an older, established urban community with 57.8% of homes built before 1960 and 45.1% of the housing stock owner-occupied. Despite this stability, the area is in transition. While Bayview Hunters Point remains home to the largest African American community in the city, it is experiencing an influx of polyethnic Asian residents who now comprise the second-largest population. The community is also experiencing new multi-unit residential infill development, particularly along Third Street on large parcels formerly occupied by industrial uses, such as the former Coca Cola bottling plant.

Environmental Consequences

Despite the geographic size of the area, the BTI Project area has strong community cohesion and distinct residential neighborhoods. The community has a high home ownership rate (over 45%), coupled with strong community traditions, a commercial identity and gateway (Third Street), central gathering places, and identifiable neighborhoods.

The Build Alternative would result in rehabilitation, reconfiguration, and widening of existing roads as well as addition of new roadways, sidewalks, bicycle lanes, parking lanes, and traffic signals, however it would not result in loss or change of existing corridors/routes or create barriers where they did not previously exist. The gateway (Third Street) and central gathering places would not be altered. Therefore, the Build Alternative would not contribute to physical separation of this existing community and would provide new key linkages that would be beneficial and enhance community cohesion. In fact, the BTI Project will extend the existing neighborhood street grid in order to increase accessibility and mobility within the study area, in particular to access new and existing waterfront open space.

The “sense of place” felt by residents is very much related to its neighborhood landmarks such as the Bayview Opera House, familiar icons such as corner markets, and physical attributes such as shoreline frontages and expansive views of the Bay. The BTI Project would not negatively affect the community’s sense of place as it would not impact any of the aforementioned neighborhood landmarks. The physical attributes of the BTI Project, including minor alterations to the existing street grid, provision of bicycle and pedestrian linkages, and connection to and development of a Transit Center would result in a greater sense of place. The BTI Project would enhance the existing sense of place, and would not detract from it. The Candlestick Park stadium (leased by the NFL for use by the 49ers) is not considered a neighborhood landmark or a community focus as it is a regional facility.

The Build Alternative has been designed to avoid any residential displacement, thereby ensuring that existing residential areas remain intact.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would have minimal or beneficial effects on neighborhoods and community cohesion. Thus, no mitigation measures are required.

Potential construction period effects on neighborhoods and businesses are described in their respective resource topic sections of this EA.

2.1.3.2 RELOCATIONS AND REAL PROPERTY ACQUISITION

Regulatory Setting

The Department’s Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and Title 49 CFR Part 24. The purpose of RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. As described below, the BTI

Project would result in the relocation of an existing gas sign; no persons would be relocated as a result of the BTI Project.

All relocation services and benefits are administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.). Please see Appendix B for a copy of the Department's Title VI Policy Statement.

Affected Environment

BUSINESS CHARACTERISTICS

Tax Revenue

The BTI Project area is located entirely within the City. As a result, the City receives an allocation of the property tax and sales tax revenues generated by private properties within the BTI Project area.

Parts of privately owned parcels are potentially located within the permanent ROW area required for the proposed BTI Project and are subject to the 1% property tax rate. A portion of the property tax revenues annually generated by these properties is allocated to the general funds of the City.

Businesses within and adjacent to the BTI Project area potentially generate sales tax revenue through the sale of taxable products. In the study area, these businesses include wholesale, construction, and commercial/industrial warehousing.

Employment

According to the California Employment Development Department (2011), which prepares labor force and employment estimates for California counties, San Francisco's civilian labor force averaged 459,600 between January and September 2011 with the unemployment rate at 8.3%.

Labor Force Characteristics

According to the 2010 Census, the BTI Project area's civilian labor force averaged 16,784 representing over 3.7% of the City's labor force during the same time. Unemployment in the BTI Project area was 13.2% in 2010, higher than the City and Countywide rate of 6.6 %. The largest percentage (26.4%) of employed BTI Project area residents worked in the educational, health, and social services sectors in 2009, reflecting the importance of University of California San Francisco (UCSF), San Francisco State University (SFSU), as well as the healthcare providers as regional job generators. Approximately 60.2% of BTI Project area workers commuted to work by private vehicle in 2010, a rate that was higher than the citywide rate of 38.9 percent (Census 2010).

Environmental Consequences

As shown in Table 2.1.3-3, the Build Alternative would require land acquisitions from six private parcels and two public parcels.

Table 2.1.3-3. Land Acquisitions

Address	Owner Name	APN	Zoning	Total Parcel sf	Project Acquisition (sf) (Partial/Full) Relocation of Use? (yes/no)	Description (existing use and effect)
3800 Third Street	Convenience Retailers LLC	5235 -011	PDR-2: Production, Distribution and Repair	15,600	100 (Partial) (No; sign would be relocated on property)	Parcel occupied by 76 Gas station. BTI Project would relocate gas station signage on corner. No effect on underground tanks, pumping stations, canopy, and no effect to access or business.
250 Executive Park Blvd	Sunpark Property	4991 -085	RC-3: Medium Residential Commercial	195,715	27,443 (Partial) (No)	Parcel occupied by landscaping, parking lot, office building. BTI Project would require acquisition of sidewalk, landscaping; no effect to access or buildings.
1 Crescent Way	SF Francis Bay, Inc	4991 -OS1	C-2: Community Business	N/A	686 (Partial) (No)	Parcel consists of landscaping area and sidewalk. This L- shaped parcel surrounds separate parcel occupied by residential use. BTI Project would require acquisition of sidewalk and landscaping; no effect to access or buildings.
A. Walker Drive/ Fitzgerald Ave	Murphy Property	4917 -003	M-1: Light Industrial	6,555	4,443 (Partial) (No)	Parcel occupied by a parking lot, surrounded by bushes. BTI Project would require acquisition of landscaping and likely a row of parking spaces; no effect to access or buildings.

Table 2.1.3-3. Land Acquisitions

Address	Owner Name	APN	Zoning	Total Parcel sf	Project Acquisition (sf) (Partial/Full) Relocation of Use? (yes/no)	Description (existing use and effect)
895 Fitzgerald Avenue/ 795 Gilman Ave	Murphy Property	4935-003	M-1: Light Industrial	49,061	9,888 (Partial) (No)	Parcel occupied by a parking lot, surrounded by bushes and chain link fence. BTI Project would require acquisition of landscaping and likely a row of parking spaces; no effect to access or buildings.
2701 A. Walker Drive ^a	SF Port	4917-002	P Public	49,100	4,922 (Partial) (No)	Parcel immediately adjacent to 4917-003 described above, occupied by a parking lot, surrounded by bushes and chain link fence. BTI Project would require acquisition of landscaping and likely a row of parking spaces; no effect to access or buildings.
1013-1175 Oakdale Ave, and 1040-1130 Palou Ave ^a	San Francisco Housing Authority	4734-002	RM-1 Residential-Mixed, Low Density	210,830	2,831 sf (Partial) (No)	Parcel occupied by residential housing w/large lawn areas. BTI Project would require acquisition of roadway, adjacent to fencing and lawn areas; no effect to access or buildings.
Crisp Road	Regents of UC	4591 A-002	M-2: Heavy Industrial	166,773	7,797 (Partial) (No)	Parcel occupied by UC research facility. BTI Project would require acquisition of area used for parking/storage; no effect to access or buildings.

^a These are City-owned properties.

Along Executive Park Boulevard, Crescent Way, Arelious Walker Drive, Fitzgerald Avenue, Oakdale Avenue/Palou Avenue, and Crisp Road, the BTI Project would include sliver or partial acquisitions of public or private property currently occupied by landscaping, parking lots, and/or fencing. None of these acquisitions would affect any

buildings or displace any businesses. In instances where existing sidewalks would be acquired, a new sidewalk would be provided. Also, where private parking spaces would be lost in the Candlestick Point area (895 Fitzgerald Avenue/ 795 Gilman Ave and A. Walker Drive/ Fitzgerald Ave), parking is only for game and event days at Candlestick Park. Removal of these spaces would not affect operations of businesses.

One parcel would require relocation of an existing gas station sign. This parcel (APN 5235-011) located at 3800 Third Street, at the intersection with Evans Avenue, is a privately-owned 15,600 square foot parcel which is currently occupied by a commercial gas station. The area required for the widening of the Third Street/Evans Avenue intersection would affect a 100-square foot area along this parcel. The BTI Project acquisition would require relocation of a sign that indicates the business name and gas prices. The acquisition would have no effect on underground tanks, pumping stations, access, buildings, or canopies. As such, this acquisition would not displace the existing business.

Avoidance, Minimization, and/or Mitigation Measures

The Build Alternative would include acquisition that could result in the relocation of a gas station sign. Potential effects related to this acquisition would be minimized by implementation of the following measure.

The City will observe the rights and provide the services required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

2.1.3.3 ENVIRONMENTAL JUSTICE

The environmental justice analysis has been prepared in accordance with the applicable guidance for addressing environmental justice, including U.S. Department of Transportation (USDOT) Order 5610.2 (April 15, 1997), FHWA Order 6640.23 (December 2, 1998), the FHWA Western Resource Center's Environmental Justice Document Checklist, and the Department's *Desk Guide—Environmental Justice in Transportation Planning and Investments* (January 2003). The information in this section is based on the CIA Technical Memorandum prepared for the BTI Project.

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2011, this was \$22,350 for a family of four (Department of Health and Human Services 2011).

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. The Department's commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

Affected Environment

An evaluation of the Census data from the 2010 U.S. Census indicates that the study area as a whole contains higher percentages of minorities than the City as a whole. Minorities comprise 93.9% of the study area compared to 58.1% Citywide. The study area has a higher proportion of African Americans (31.4%) and, to a lesser extent, Hispanics (24.3%), when compared to the entire City's population.

The number of people in the BTI Project area with incomes below the poverty level was 6,986 (approximately 19.5% of the BTI Project area population) in comparison to approximately 92,602 people (approximately 11.5%) of the City's residents.⁶ As shown in Appendix C of the CIA, there are three census tracts (230.01, 231.03 and 234) in which the percent of the population below the poverty line is at least 10 points higher than the base community of the entire City.

Based on this evaluation, the BTI Project would affect a community comprised of substantial proportions of both minority and low-income persons.

Environmental Consequences

The Build Alternative would result in improvements to the existing roadway network within the BTI Project area and will include reconstructing, repaving, and limited widening of existing City streets and constructing new street segments to create a multi-modal transportation network. The network would promote expanded bus service, provide new bus rapid transit (BRT) service to proposed transit centers, create pedestrian and bicycle linkages throughout the community, and improve vehicular connections to and within the community. These transportation improvements would serve the existing Bayview and Hunters Point neighborhoods and the future Southeast Waterfront Community. The Build Alternative would provide enhanced transit, vehicular and non-motorized transportation infrastructure within the Southeast Waterfront community and retain connections to the regional highway network enabling extended and increased transit service through the existing and future community.

A study and calculator developed in 2009 by the Urban Land Institute and the Center for Neighborhood Technology found that transportation costs in this area of San Francisco (identified by zip code 94124) are approximately \$2,000 greater annually per household than the rest of the City and the combined housing plus transportation burden (as a percentage of total income) is more than double when compared to City as a whole (Urban Land Institute 2009). The BTI Project would remedy this situation by bringing transit to existing neighborhoods and focusing planned development near transit. The BTI Project would also ensure that existing and future roadway networks support the efficient movement of auto and truck traffic from nearby freeways into Southeast San Francisco. Transit links to the regional Bayshore Caltrain Station and the Third Street Light Rail line will facilitate single-transfer trips from Candlestick Point and HPS to Silicon Valley and downtown San Francisco and would also enable residents of other parts of the Bay Area to reach the new retail and employment opportunities at Candlestick Point and HPS. This accessibility is essential to improving conditions in the economically-challenged Bayview Hunters Point neighborhood.

⁶ The 2009 Environmental Justice Report (refer to Table 2 Project Area Poverty Statistics) prepared by PBS&J indicated that the CP-HPS Plan area which is roughly the same as the proposed BTI Project, has a poverty level of 15.6% in comparison to approximately 10.6% compared to the City.

Environmental effects that may affect the overall population and minority and low-income populations in the BTI Project area include cultural resources (see Section 2.1.7, *Cultural Resources*), visual quality (see Section 2.1.6, *Visual/Aesthetics*), projected noise increases (see Section 2.2.6, Noise and Vibration), potential exposure to hazardous materials during Project construction (see Section 2.2.4, Hazardous Waste/Materials), short-term or temporary effects on water quality (Section 2.2.2, Water Quality and Storm Water Runoff), and temporary construction period air quality effects (Section 2.2.5, Air Quality). The adverse effects of the BTI Project would be borne to some degree by all community residents. For example, the transport of excavated hazardous materials would occur on streets throughout the BTI Project area. Although traffic noise would be more localized, traffic noise effects would be borne by all populations along or near a designated access route. There would be no adverse effects and indeed may be beneficial effects on community cohesion, the community's economic vitality, and traffic congestion.

The design and implementation of the BTI Project has been an established goal of the Bayview Hunters Point community for well over a decade. The Build Alternative has evolved and been developed with the community to identify and avoid adverse effects such as residential displacement and selection of an alignment that would divide or separate residential areas, no matter how small. This early screening and refinement of the BTI Project has resulted in tradeoffs and benefits that are reflected in the Build Alternative. In addition, measures are identified in this document in the sections noted above to minimize potential adverse effects. Given these considerations, the environmental justice assessment addresses whether potential adverse effects of the BTI Project alternatives could be considered disproportionately high and adverse.

The effects of the BTI Project would be disproportionately high and adverse if the effects: 1) are predominately borne by a minority or low-income population in the study area or; 2) will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low income population.

The BTI Project area has a high percentage of minority and low-income residents in comparison to the City as a whole. The BTI Project presents an unusual situation in that, unlike most projects, both the adverse and beneficial effects of the BTI Project would affect minority and low-income residents due to the racial and income composition of the study area which is predominantly minority and low-income. The Project area also includes some census tracts (e.g., 610 and 9806) that are not low-income. Populations within these census tracts would also be affected by construction work and ROW acquisitions.

The potential adverse effects of the Build Alternative would not be substantially more severe or greater in magnitude on minority and low-income populations because the purpose of the BTI Project is to improve existing conditions in neighborhoods with predominantly minority and low-income populations by reducing through traffic on neighborhood streets and providing enhanced transit access for community residents via the San Francisco Municipal Transportation Agency (SFMTA) transit system to other areas of San Francisco and the Bay Area community. All beneficial and adverse effects of the BTI Project would accrue in minority and low-income communities.

Prior to the consideration of avoidance, minimization and/or mitigation measures, and based on the findings described above, the Build Alternative would disproportionately affect minority or low-income populations in relation to the City as a whole. However, as noted above, all the potential adverse effects identified in the technical studies could be satisfactorily avoided or minimized through the implementation of recommended measures. Because there has been no evidence to suggest that the effectiveness of these measures would differ with respect to different population groups, the net result would be the same for all population groups for these resource areas. After consideration of avoidance, minimization and/or mitigation measures, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

Avoidance, Minimization, and/or Mitigation Measures

As described throughout this document, a number of measures would be implemented that would further ensure that there would be no disproportionate adverse effects on minority and low-income populations. The measures are briefly summarized below:

- Section 2.1.6, Visual Resources: The BTI Project will include landscaping and installation of street furniture, and design of retaining walls cohesive with the surrounding urban environment and protecting existing viewsheds.
- Section 2.1.7, Cultural Resources: In the event that unidentified buried cultural materials are encountered during construction, work will stop in that area until a qualified archaeologist can evaluate the find.
- Section 2.2.2, Water Quality and Storm Water Runoff: A Storm Water Pollution Prevention Plan (SWPPP) and best management practices (BMPs) would be required to prevent short-term or temporary construction effects on water quality. Low Impact Design (LID) features would be required to address long-term effects related to a permanent increase in runoff and pollutant loading.
- Section 2.2.4, Hazardous Wastes/Materials: A Preliminary Site Investigation/Phase II investigation would be performed prior to construction due to the potential for adverse effects related to exposure of hazardous materials. Following the investigation, appropriate avoidance, minimization and/or mitigation measures will be developed to ensure that exposure to hazardous waste will not occur.
- Section 2.2.5, Air Quality: The BTI Project will prepare a SFDPH-compliant site-specific dust control plan to minimize visible dust and an asbestos dust mitigation plan to address construction period adverse effects.
- Section 2.2.6, Noise: Standard Department noise reduction measures would be required to minimize the temporary noise effects from construction. Noise levels would increase and could affect sensitive receptors. The predicted traffic noise level in the design year would approach or exceed the noise abatement criterion for Activity Categories B and C uses (residential and park uses) and/or would result in a substantial increase in noise of at least 12 dB. Noise abatement, such as noise barriers, was considered for each of the affected uses and was found to be infeasible because areas in which noise impacts were identified for residential uses are generally local roadways with street parking, bicycle lanes, and residences with street frontage, and driveways that directly access the roadways. It would, therefore, be infeasible to construct a noise barrier in these locations.

There are no instances in which substantial increases (12 decibels or greater) would occur between 2035 With Project and 2035 Without Project scenarios. There are substantial increases in predicted noise levels at seven locations when comparing existing conditions to “2035 future conditions” (both project/no-project). The “2035 no-project” condition represents the City’s adopted redevelopment plan for the BTI Project area. Therefore, the “2035 with project” vs. “2035 no-project” is the most valid comparison of potential noise impacts. In only one of the seven locations identified as having substantial increases would the “with project” predicted noise level be greater than the “no-project” conditions (specifically M-31). M-31 is located in a park between Harney Way and the San Francisco Bay and consists only of walking trails and no active recreational facilities. The increase in noise would be 2 dBA. Although this receiver represents an area of human use, it is associated with footpaths that has only transitory use (i.e., less than an hour) and would not result in a cumulative amount of time on a daily, weekly, or yearly level that would be considered frequent or have detrimental effects on the activities of humans at the receiver location. Thus, a lowered noise level at this location would not be a benefit and abatement is not considered further for this park.

Based on the above discussion and analysis, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations as per EO 12898 regarding environmental justice.

2.1.4 UTILITIES/EMERGENCY SERVICES

2.1.4.1 AFFECTED ENVIRONMENT

This section includes information from the following sources.

- Personal communications with utilities and emergency service providers.
- Review of City utilities and emergency service providers websites.
- Recent CEQA Documents prepared for projects in the Project area.

Utilities

Existing utilities in the BTI Project area are located aboveground and underground. Aboveground utilities include overhead electrical distribution and transmission lines, and underground utilities include electrical, gas, water, sanitary sewer and storm water, television/cable, telecommunications, and telephone lines.

CITY UTILITIES

City utilities that may be affected by the Build Alternative include traffic signals, the combined sewer systems (CSS) which includes sewer and storm water, water lines that are part of the Regional Water System (RWS), and the Auxiliary Water Supply System (AWSS) for fire protection purposes.

Traffic signals within the city are supplied with municipal power by the San Francisco Public Utilities Commission (SFPUC). SFPUC also manages water (RWS) and storm water/wastewater (CSS) for the BTI Project area. The Southeast Water Pollution Control Plant (SEWPCP) which is located within the BTI Project area treats wastewater from the eastern side of the city, most of the commercial area (downtown), and the bulk of all industrial discharge. The Griffith Pump Station is also located within the BTI Project area and pumps wet-weather flows to the Islais Creek Drainage Basin.

The AWSS is a separate and distinct water distribution system operated and maintained by the San Francisco Fire Department (SFFD) for fire protection purposes. Candlestick Point and HPS are not currently served by the AWSS. There is a planned extension of the AWSS on Gilman Street from Ingalls Street to Candlestick Point, providing an AWSS loop within Candlestick Point. At HPS, the AWSS would be connected to the existing AWSS system at the intersection of Earl Street and Innes Avenue and at the Palou Avenue and Griffith Avenue intersection with looped service along Spear Avenue/Crisp Road. The planned AWSS extension is not yet complete; SFFD is currently considering the method of funding its construction.

OTHER UTILITIES

In addition to utility services provided by the City, the BTI Project area is also served with natural gas and electricity by Pacific Gas & Electric Company (PG&E). Television, telephone, and internet services are provided by any one of a number of service providers in the City.

Finally, the SFPUC has been constructing new and replacement trunk lines within the BTI Project area. These lines could potentially be affected by project construction.

Public and Emergency Services

LAW ENFORCEMENT

The San Francisco Police Department (SFPD) and San Francisco Sheriff's Department (SFSD) provide law enforcement services in the City, including the BTI Project area. The Bayview Station, operated by the Bayview Police District of the SFPD since 1997, is located at 201 Williams Street. In addition to law enforcement services, the Bayview Station provides a number of community outreach programs and crime prevention activities for Bayview Hunters Point area residents. Monthly meetings are held at the station to address current issues of concern, upcoming events, crime rates, etc. In addition, there are various neighborhood safety watch programs within the community that assist police with crime prevention and neighborhood protection.

FIRE PROTECTION AND EMERGENCY MEDICAL SERVICES

SFFD provides fire and emergency services throughout the entire City, including the study area. The SFFD has 44 station locations distributed throughout the City of San Francisco. Division 3 of the SFFD serves the Bayview Hunters Point and CP-HPS Plan area communities; Stations 9 (2245 Jerrold Avenue), 17 (2295 Shafter Avenue), and 25 (3305 Third Street) are located within the study area. The SFFD provides community outreach and fire prevention programs for area residents. Additionally, paramedic and emergency medical services are provided by the SFFD.

2.1.4.2 ENVIRONMENTAL CONSEQUENCES

Utilities

Table 2.1.4-1 summarizes the proposed number of utility relocations under or within existing northern roadways (i.e., Cesar Chavez Street, Evans Avenue, Innes Avenue) and existing southern roadways (i.e., Harney Way, Gilman Avenue, Carroll Avenue, Ingalls Street, Griffith Street) that would occur under the Build Alternative.

As part of the Build Alternative, some of the CSS system lines would be relocated to allow the narrowing of sidewalks. Sewer pipes would be moved along Harney Way between Thomas Mellon Circle and Jamestown Avenue and Griffith Avenue (between Thomas Avenue and Crisp Avenue/Palou Avenue).

For new streets within HPS and Candlestick Point, new utilities (not accounted for in Table 2.1.4-1) would be installed. The areas within HPS and Candlestick Point that would require new utilities (including electrical, gas, water, AWSS, separate storm water and sewer systems, television/cable, telecommunications, and/or telephone lines) are:

- Within HPS and as part of the Northern Roadway improvements: Donahue Street; Robinson Street; Lockwood Street; and Fischer Street;
- As part of the Southern Roadway improvements: Harney Way; the Arelious Walker Extension; Arelious Walker Drive; Thomas Avenue; Egbert Avenue; and Crisp Road;
- As part of improvements to Secondary Access Routes: Palou Avenue; Ingerson Avenue; and Jamestown Avenue;
- As part of the HPS Transit Center: D Street; Nimitz Avenue; and a new Spear Avenue.

In addition, as part of the BTI Project transit improvements, trolley wires and poles would be located on Palou Avenue and within the HPS. A power substation, likely similar in size and configuration to existing substations that serve existing trolley buses in the City is also being considered in an area within the City's right of way north of Crisp Avenue.

Short-term (construction-period) impacts include interruptions in utility services. This could include limited interruptions in service for gas, water, telephone, television/cable, and internet service. No interference in power is anticipated as PG&E would put customer loads on alternate lines until the connections are re-established. In the long-term, existing residents and businesses in the BTI Project area would have their utilities restored to existing conditions, or potentially enhanced, depending on available technology.

Table 2.1.4-1. Proposed Utility Relocations on Existing City Streets (Approximate Number of Block Locations)		
Affected Utility	Route	
	Northern Roadway Improvements	Southern Roadway Improvements
PG&E—12-Kilovolt (Overhead)	11	1
PG&E—Electric	7	12
PG&E—Gas	1	—
Auxiliary Water Supply System	6	4
Telephone	9	—
Television and cable	1	—
Traffic Signal	3	—
Water	—	3
Sewer	—	6
Total	38	26
Source: San Francisco Department of Public Works (SFPDW), August 2007. Updated per personal communication with SFPDW staff, December 2011. Note: Within the Candlestick Point and HPS, existing utilities would be excavated and relocated and new utilities would be installed as necessary.		

Public and Emergency Services

Short-term (construction period) effects related to public services and emergency services include potential detours/roadway closures affecting SFPD and SFFD (refer to Section 2.1.5, *Traffic and Transportation/Pedestrian and Bicycle Facilities*). In general, short-term street closures or detours are expected to have little or no effect on the ability of community members/public and emergency services to access the BTI Project area. A transportation management plan (TMP) would be developed by the construction contractor to address maintenance of traffic and emergency services delivery during construction, and advance notice of and coordination with public and emergency service providers would occur.

The long-term effect of the BTI Project on emergency services would be to divert traffic from residential areas; therefore, enhancing accessibility and mobility for SFPD and SFFD within the Bayview Hunters Point area.

2.1.4.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Utilities

Design, construction, and inspection of utilities added, enlarged, or relocated for the Build Alternative would be done in accordance with the City's requirements. Where feasible, utility relocations or installations would be undertaken in advance of BTI Project construction. The City would coordinate with affected public service providers in each instance to ensure that work is done in accordance with the appropriate requirements and criteria. In addition, coordination with the utility providers would be initiated during the preliminary engineering phase of the BTI Project and would continue through final design and construction. Coordination efforts would plan utility routes during construction, identify potential conflicts, ensure that construction of the BTI Project minimizes disruption to utility operations, and formulate strategies for overcoming problems that may arise. No major utility infrastructure (e.g., electrical lines or pump/electrical substations) would be affected (Yu 2012). Nonetheless, the potential exists for construction activities to encounter unexpected utilities within the area of roadway improvements. In addition, utility relocations may require short-term, limited interruptions of service. No interference to existing utility services is anticipated during the realignment of the overhead power distribution lines because PG&E would put customer loads on alternate lines until the connections are re-established.

If unexpected underground utilities are encountered, the construction contractor would coordinate with the utility provider to develop plans to address the utility conflict, protect the utility if needed, and limit service interruptions. Any short-term, limited service interruptions of known utilities would be scheduled well in advance and appropriate notification would be provided to users.

Public and Emergency Services

Although construction of the proposed BTI Project is not anticipated to hinder the work of emergency service providers, similar to utility providers, coordination with the emergency service providers would be initiated during the preliminary engineering phase of the project and would continue through final design and construction. Coordination efforts would identify potential conflicts, ensure that construction of the project minimizes disruption to emergency service providers, and formulate strategies for overcoming problems that may arise.

2.1.5 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

The Department, as assigned by FHWA in cooperation with the City and County of San Francisco (City), proposes to improve the existing roadway network within the Southeast Community neighborhood of San Francisco. Figure 1-1 in Chapter 1 shows the location of the BTI Project within the City of San Francisco.

Figure 1-2a shows the locations of proposed BTI Project improvements. The BTI Project includes reconstructing, repaving and limited widening of existing city streets, and constructing new street segments to create a multi-modal transportation network. The network would promote expanded bus service, provide new BRT service to proposed transit centers, create pedestrian and bicycle linkages throughout the community, accommodate truck routes, and improve vehicular connections to and within the community. These transportation improvements would serve the existing Bayview and Hunters Point neighborhoods and the future Southeast Waterfront community. The BTI Project would provide enhanced transit, vehicular and non-motorized transportation infrastructure within the Southeast Community and retain and enhance connections to the regional highway network (US 101 and I-280) while integrating the community into the citywide SFMTA transit network. Roadway and transit improvements are summarized in Tables 1-4, 1-5, 1-6, and 1-7.⁷

The following sections detail the regulatory setting, affected environment, environmental consequences, and mitigation measures associated with the BTI Project.

2.1.5.1 REGULATORY SETTING

The Department, as assigned by FHWA, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (see 23 CFR 652). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, USDOT issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally-assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 USC 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

The Department has not formally adopted standards for potential BTI Project effects related to transportation, but generally considers that implementation of the BTI Project would have an effect on these resources if it were to:

⁷ Typical and selected segment cross sections are provided in the Bayview Transportation Improvements Project Transportation Impact Study (TIS) (Fehr & Peers, March 2012). The TIS also includes additional background data, assumptions and methodology. Many of the analyses presented in this section refer to the appropriate figure or table in the TIS that contains relevant supporting information.

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections).
- Exceed, either individually or cumulatively, a LOS standard established by the City congestion management agency for designated roads or highways (unless it is practical to achieve the standard through increased use of alternative transportation modes).
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.
- Result in inadequate parking capacity that could not be accommodated by alternative solutions.
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks), or cause a substantial increase in transit demand that cannot be accommodated by existing or proposed transit capacity or alternative travel modes.

The transportation and circulation impact findings herein are also based on the following impact criteria used by the San Francisco Planning Department for the determination of effects associated with a proposed project. These criteria are considered to inform the NEPA review.

- Traffic: In San Francisco, the threshold for an adverse effect on traffic has been established as deterioration in the LOS at a signalized intersection from LOS D or better to LOS E or LOS F, or from LOS E to LOS F. The operational effects on unsignalized intersections are considered potentially adverse if project-related traffic causes the level of service at the worst approach to deteriorate from LOS D or better to LOS E or LOS F and Department signal warrants would be met, or causes Department signal warrants to be met when the worst approach is already at LOS E or LOS F.
 - For an intersection that operates at LOS E or LOS F under existing conditions, there may be an effect depending upon the magnitude of the project's contribution to the worsening of delay. In addition, a project would have an effect if it would cause major traffic hazards, or would contribute considerably to the cumulative traffic increases that would cause the deterioration in LOS to unacceptable levels (i.e., to LOS E or LOS F).
- Transit: The project would have an adverse effect if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable ridership conditions or exceeded capacity thresholds, insufficient levels of transit service, or cause a substantial increase in operating costs or delays such that effects in transit service levels could result.
- Pedestrians: The project would have an effect if it would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.
- Bicycles: The project would have an effect if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

- **Loading:** The project would have an effect if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within the proposed onsite loading facilities or within convenient on-street loading zones, and if it would create potentially hazardous traffic conditions or substantial delays affecting traffic, transit, bicycles or pedestrians.
- **Emergency Vehicle Access:** The project would have an effect if it would hinder emergency vehicle access.
- **Construction:** Construction-related effects generally would not be considered adverse due to their temporary and limited duration. However, in circumstances involving large development plans where construction would occur over long periods of time, construction-related effects may be considered adverse.
- **Parking:** The project would have an effect if it was responsible for a deficit of parking spaces needed to adequately serve the projected parking demand, including providing reserved parking spaces close to the project for the exclusive use of the handicapped, that cannot be accommodated by alternative transportation solutions.

Analysis Scenarios

The BTI Project study area, comprised of roadways, intersections, transit lines, and pedestrian and bicycle facilities on and adjacent to the BTI Project segments, are evaluated under conditions with and without the BTI Project components in place in a Future Year (2035), when both the BTI Project and the CP-HPS Plan development would be fully in place. These two scenarios, along with an analysis of Existing Conditions, are analyzed in the TIS.

2.1.5.2 AFFECTED ENVIRONMENT

Existing Conditions

Information in this section is drawn from the BTI Project TIS (Fehr & Peers 2012). Existing transportation conditions for the BTI Project study area were based on the *CP-HPS Phase II Development Plan Transportation Study (CP-HPS Transportation Study)*, November 2009. Although they share a similar study area, the BTI Project is distinct from the CP-HPS Plan development. The CP-HPS Plan proposes to develop a new mixed use development in the southeast corner of San Francisco, a relatively isolated area within the City. The BTI Project, at its core, is a roadway infrastructure project and although transit service would benefit from the transit-supporting elements of the BTI Project namely the BRT line, the BTI Project itself does not propose to operate any transit service or develop any land uses.

The transportation study area includes all aspects of the transportation network that could be measurably affected by the BTI Project. The transportation study area is defined by travel corridors and by facilities such as bus stops/transit stations. It includes the existing and proposed street intersections that residents and visitors would use in traveling to and from the area, including freeway mainline segments and ramps. A total of 36 existing intersections within the study area, (a majority of which lie on roadways that would be improved by the BTI Project) were identified as key locations that could be affected by the BTI Project and were thus selected for detailed study. The study intersections include all major intersections along Third Street and access routes to and from US 101. Two segments of US 101, one segment of I-280, and eight ramps on those

freeways were also considered. Intersections and freeway segments and ramps farther away were not analyzed as part of the study because the BTI Project is not expected to change trip patterns enough to affect them.

TRAFFIC OPERATING CONDITIONS

Existing traffic operating conditions were determined for the 36 study intersections, 20 of which are signalized and 16 of which are unsignalized. Operating conditions were determined using existing intersection count data collected for the CP-HPS Transportation Study in November and December 2007 and June 2009. Analysis of existing conditions at local intersections was conducted for the weekday PM (5:00 to 6:00) peak hour condition. The PM peak hour considers the current evening commute period and was determined to have the worst congestion in the CP-HPS Transportation Study. The traffic operating characteristics of signalized and unsignalized intersections within the BTI Project study area are evaluated based on the concept of LOS, a qualitative description of an intersection's performance based on the average seconds of delay per vehicle (Source: TIS Table 2, page 43). LOS A represents the best conditions and LOS F the worst. In San Francisco, LOS E and F are considered undesirable operating conditions for signalized intersections.

Table 2.1.5-1 presents the results of the intersection LOS analysis for the existing weekday PM peak hour conditions. All of the study intersections currently operate at LOS D or better during the weekday PM peak hour.

Table 2.1.5-1. Existing Conditions Intersection LOS			
Intersection	Control	Weekday PM	
		Delay^{1,2}	LOS
1. 25th St/Pennsylvania Ave	AWSC	12	B
2. Third St/25th St	Signal	16	B
3. 25th St/Illinois St	AWSC	7	A
4. Cesar Chavez St/Evans Ave	Signal	21	C
5. Cesar Chavez/Penns/I-280	Signal	39	D
6. Third St/Cesar Chavez St	Signal	31	C
7. Cesar Chavez St/Illinois St	Signal	19	B
8. Evans/Napoleon/Toland	Signal	46	D
9. Third St/Cargo Way	Signal	20	B
10. Amador St/Cargo Way	Signal	12	B
11. Third St/Evans Ave	Signal	34	C
12. Third St/Jerrold Ave	Signal	23	C
13. Third St/Oakdale Ave	Signal	19	B
14. Third St/Palou Ave	Signal	27	C
15. Third St/Revere Ave	Signal	31	C
16. Third/Williams/Van Dyke	Signal	22	C
17. Third St/Carroll Ave	Signal	14	B
18. Third St/Paul Ave	Signal	24	C
19. Third St/Ingerson Ave	Signal	5	A
20. Third St/Jamestown Ave	Signal	14	B

Table 2.1.5-1. Existing Conditions Intersection LOS

Intersection	Control	Weekday PM	
		Delay ^{1,2}	LOS
21. Third/Le Conte/US 101 nb off	Signal	11	B
22. Evans Ave/Jennings St	AWSC	10	B
23. Innes Ave/A.Walker Drive	SSSC	8.7(sb)	A
24. Innes Ave/Earl St	SSSC	8.6(sb)	A
25. Innes Ave/Donahue St	AWSC	7	A
26. Crisp Ave/Palou Ave	SSSC	11.6(nb)	B
27. Ingalls St/Palou Ave	AWSC	9	A
28. Keith St/Palou Ave	AWSC	9	A
29. Ingalls St/Thomas Ave	SSSC	11.5(wb)	B
30. Ingalls St/Carroll Ave	AWSC	8	A
31. Ingalls St/Egbert Ave	AWSC	8	A
32. A.Walker/Gilman Ave	SSSC	9.2(sb)	A
33. Harney Way/Jamestown Ave	AWSC	8	A
34. Harney/Executive Park East	SSSC	3.5 (sb)	A
35. Alana Way/Harney Way/T.Mellon	AWSC	8	A
36. Alana Way/Beatty Ave	AWSC	9	A
Notes: ¹ . Delay presented in seconds per vehicle. ² . Intersection STOP-controlled. Delay and LOS presented for worst approach. Worst approach indicated in (). AWSC = All-way stop controlled SSSC = side-street stop-sign controlled Source: Fehr & Peers.			

Freeway Analysis

Freeway mainline, weaving sections, and on-ramp junctions were analyzed using existing intersection count data collected for the CP-HPS Transportation Study and for the weekday PM (5:00 to 6:00) peak hour condition, similar to intersection operations. Vehicle density (passenger cars/lane/mile) and service volume (passenger cars/hour) are the primary measures of freeway operations. The method to calculate this value and the resulting relationships between freeway segment and weaving segment density, service volume, and LOS are presented in the TIS (Source: TIS, Table 4, page 45). Like intersection operations, LOS A is considered the best operating conditions and LOS F the worst. The Department's policy is to maintain freeway mainline and ramp operations at the LOS C/D threshold based on the Guidelines for the Preparation of Traffic Impact Studies (Caltrans 2002); however, the Department acknowledges that this may not always be feasible and if an existing facility is operating at less than the appropriate LOS target, the existing service level should be maintained.

Table 2.1.5-2 presents the results of the freeway LOS analysis for the existing weekday PM peak hour conditions. All of the analysis segments currently operate at LOS E, except for the weaving segment of I-280 Northbound between 25th Street and Mariposa Street which operates at LOS C, during the weekday PM peak hour.

Table 2.1.5-2. Mainline And Weaving Segment LOS—Existing Conditions		
Mainline Segment	Weekday PM Peak Hour	
	LOS ¹	Density ² (pc/mi/ln)
US 101		
NB – Harney Way to Third/Bayshore	E	42.3
NB – Sierra Point to Harney Way	E	42.9
SB – Third/Bayshore to Alana Way	E	36.0
SB – Alana Way to Sierra Point	E	36.8
Weaving Segment ⁴	LOS	Service Volume ³ (pc/h)
I-280		
NB – 25th Street to Mariposa Street	C	1,350
SB – Mariposa Street to 25th Street	E	1,630
Notes: ^{1.} Segments operating at LOS E or LOS F conditions highlighted in bold ^{2.} Density of vehicles per segment. pc/mi/ln = passenger cars per mile per lane. ^{3.} For weaving sections service volume is reported as the measure of effectiveness. pc/h = passenger cars per hour ^{4.} Weaving segments with travel speeds greater than 50 mph are out of the realm of weaving analysis and thus are assumed to operate at LOS A conditions. Source: Fehr & Peers 2012.		

FREEWAY RAMP JUNCTION ANALYSIS

A ramp junction analysis was conducted to determine the operating conditions for ramp volumes merging with the freeway mainline traffic flow. Freeway ramp analyses were conducted at eight on-ramps. Freeway ramps were evaluated using the Highway Capacity Manual (HCM) 2000 methodology for ramp merge and diverge conditions. Service levels at the on- and off-ramps are determined based on density, as calculated using the freeway volumes and the ramp volumes at each study location. Similar to the freeway mainline, the operating characteristics of the ramps are described using the concept of LOS (Source: TIS, Table 4, page 45).

Table 2.1.5-3 presents the results of the freeway ramp LOS analysis for Existing conditions. During the weekday PM peak hour, all of the ramps currently operate at LOS D or better, with the exception of the I-280 southbound on- and off-ramps at Pennsylvania/25th Street.

Table 2.1.5-3. Ramp Junction LOS—Existing Conditions

Ramp Location	Weekday PM Peak Hour	
	LOS ¹	Density ² (pc/mi/ln)
US 101		
NB on from Harney Way ²	D	30.0
NB on from Bayshore	D	28.6
SB on from Third/Bayshore	C	26.5
SB on from Alana Way	C	24.2
I-280		
NB off to Cesar Chavez	D	28.4
NB on from Indiana/25th	C	27.4
SB off to Pennsylvania/25th	E	36.7
SB on from Pennsylvania/25th	E	38.5
Notes:		
¹ Ramp junctions at LOS E or LOS F conditions highlighted in bold		
² Density of vehicles per segment. pc/mi/ln = passenger cars per mile per lane.		
Source: Fehr & Peers 2012.		

Transit Ridership and Capacity Utilization

The study area is served by public transit that provides crosstown, community, downtown and regional service, but due to its location in the southeast corner of San Francisco, it is fairly isolated. Local service within the study area is provided by Muni bus and light rail lines, which can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit (BART), Alameda Contra Costa Transit (AC Transit), and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; and service to and from the Peninsula and South Bay is provided by Caltrain, San Mateo County Transit District (SamTrans), and BART. The existing transit network is identified in the Transportation Impact Study (TIS) (Source: TIS, Figure 14, page 48).

Table 2.1.5-4 presents Muni's ridership and capacity utilization for the weekday PM peak hour at the maximum load point (i.e., the point of greatest demand) for the local lines serving the study area. For each line, the number of peak hour riders inbound and outbound from downtown San Francisco was obtained at the maximum load point from Muni monitoring data. The service capacity of each line was estimated by multiplying the passenger capacity standard for transit vehicles by the number of actual bus trips that occurred at the time that the ridership data was collected. The capacity includes seated passengers and an appreciable number of standing passengers per vehicle. The maximum loads, including both seated and standing passengers, vary by vehicle type and are 45 passengers for a 30-foot bus, 63 passengers for a 40-foot bus, 94 passengers for a 60-foot bus, and 119 passengers for a light rail vehicle. The comparison of the ridership demand to the capacity provided is expressed as a percent utilization of capacity.

Table 2.1.5-4. Muni Ridership and Capacity Utilization at Maximum Load Points Existing PM Peak Hour Conditions

Route	Ridership	Capacity Utilization ¹	Destination	Maximum Load Point
Inbound				
9-San Bruno	429	57%	Downtown	Potrero Ave & 20 th St
19-Polk	223	59%	Fisherman's Wharf	Seventh St & Howard St
23-Monterey	100	39%	Bayview	Diamond & Bosworth Ave
24-Divisadero	144	38%	Pacific Heights	Castro St & 17 th St
28L-19 th Ave Limited	150	39%	The Richmond	19 th Ave & Quintara St
29-Sunset	124	33%	The Presidio	Persia Ave & Mission St
44-O'Shaughnessey	187	37%	The Richmond	Silver Ave & Merrill St
48-Quintara-24 th St	180	57%	Potrero Hill	24 th St & Harrison St
54-Felton	59	31%	Hunters Point	Bacon St & San Bruno Ave
56-Rutland	12	13%	Visitacion Valley	San Bruno Ave & Arleta St ²
T-Third	333	35%	Sunnydale	4 th St & King St
Outbound				
9-San Bruno	274	36%	Visitacion Valley	Potrero Ave & 22 nd St
19-Polk	207	54%	Hunters Point	Eighth St & Market St
23-Monterey	98	39%	The Zoo	Diamond St & Bosworth St
24-Divisadero	215	56%	Bayview	Castro St & 19 th St
28L-19 th Ave Limited	105	28%	Daly City BART	19 th Ave & Quintara St
29-Sunset	160	42%	Bayview	19 th Ave & Holloway Ave
44-O'Shaughnessey	334	66%	Hunters Point	Bosworth St & Diamond St
48-Quintara-24 th St	160	50%	Ocean Beach	24 th St & Folsom St
54-Felton	59	31%	Daly City BART	San Bruno Ave & Bacon St ²
56-Rutland	11	12%	Visitacion Valley	Hahn St & Visitacion St
T-Third	369	39%	Castro	Fourth St & King St
Notes:				
1. Route direction follows Muni convention; convention is generally inbound toward or clockwise around downtown with the following exceptions: 23-Monterey, 54-Felton, and T-Third St lines inbound towards Bayview.				
2. Maximum Load Point occurs near the study area.				
Source: SFMTA 2007 Trip Activity Reports, Fehr & Peers 2012.				

As indicated in Table 2.1.5-5, the maximum load point of two of the ten bus and rail lines occur near the study area. For the 54-Felton bus line, the PM peak hour maximum load point in both the inbound and outbound directions occurs at the stops at the intersection of San Bruno Avenue and Bacon Street.

Muni has established a capacity utilization standard of 85%. As shown in Table 2.1.5-5, the weekday PM capacity utilization for all the lines serving the study area is within Muni's standards.

In addition to evaluating Muni operations at the maximum load point for individual routes, and consistent with standard practice in San Francisco, four screenlines⁸ for routes serving the downtown financial district were evaluated. This evaluation examined the overall utilization of Muni transit capacity into and out of downtown San Francisco from the northeast, northwest, southeast, and southwest. The location of the downtown screenlines and local project bounded screenlines located at entries to the Project area are presented in the TIS (Source: TIS Figure 15, page 54) Existing ridership and capacity utilization at each screenline location is shown in Table 2.1.5-5. Overall, each screenline currently operates within Muni's 85% utilization standard, with the southwest screenline the most crowded. The southwest screenline includes all subway lines except for the J-Church light rail, the F-Market historic streetcar, and the 6-Parnassus, 7-Haight, 71-Haight-Noriega, and 71L-Haight-Noriega Limited bus lines.

Table 2.1.5-5. Muni Ridership and Capacity Utilization at Downtown Screenlines Existing Conditions—Weekday PM Peak Hour		
Screenline/Peak Hour	Ridership	Capacity Utilization
Northeast	1,886	52%
Northwest	6,621	65%
Southeast	4,668	66%
Southwest	<u>7,434</u>	<u>77%</u>
Total All Screenlines	20,609	68%
Source: SFMTA Planning Department; AECOM 2009.		

Two screenlines at the perimeter of the study area were examined to analyze potential effects of the BTI Project on Muni service: the north screenline at Cesar Chavez Street, and the west screenline located west of US 101. In addition, a third screenline within the study area, located east of Third Street was reviewed to assess the degree to which BTI Project transit demand between the CP-HPS Plan area and the T-Third Street light rail service would affect localized transit capacity. Table 2.1.5-6 presents the weekday PM peak hour inbound and outbound ridership and capacity utilization for the north and west screenlines, as well as for each line within the screenlines. Table 2.1.5-7 presents the weekday PM peak hour inbound and outbound ridership and capacity utilization for the internal screenline located east of Third Street.

⁸ A screenline is a method to determine whether a project study area has adequate directional transit capacity transit demand to meet demand. Transit lines/routes are grouped together based on screenlines. With several surface transit options connecting the Region and other areas of the City to the project study area, riders would choose their route based on several factors including reliability, headways, type of transit, comfort and convenience. If one transit line becomes overcrowded or slow, transit riders may choose to take a parallel transit line with less crowding, even if it requires a longer walk to the transit stop.

**Table 2.1.5-6. Muni Ridership and Capacity Utilization at Study Area Screenlines
Existing Pm Peak Hour Conditions**

Screenline/Route	Ridership Inbound/Outbound	Capacity Utilization Inbound/Outbound
North (at Cesar Chavez)		
T-Third	330 / 278	35% / 29%
9-San Bruno	429 / 274	57% / 36%
19-Polk	<u>87 / 74</u>	<u>23% / 19%</u>
Subtotal	<i>846 / 626</i>	<i>41% / 30%</i>
West (West of US 101)		
23-Monterey	100 / 98	39% / 39%
24-Divisadero	114 / 147	30% / 39%
29-Sunset	71 / 21	19% / 6%
44-O'Shaughnessey	187 / 334	37% / 66%
48-Quintara-24 th St	180 / 160	57% / 50%
54-Felton	<u>59 / 59</u>	<u>31% / 31%</u>
Subtotal	<i>711 / 819</i>	<i>36% / 42%</i>

Source: SFMTA 2007 Trip Activity Reports, Fehr & Peers.

**Table 2.1.5-7. Muni Ridership and Capacity Utilization at East of Third Street Screenline
Existing PM Peak Hour Conditions**

Screenline/Route	Ridership Inbound/Outbound	Capacity Utilization Inbound/Outbound
19-Polk	87 / 74	23% / 19%
23-Monterey	58 / 15	23% / 6%
29-Sunset	71 / 21	19% / 6%
44-O'Shaughnessey	114 / 84	22% / 17%
54-Felton	<u>59 / 59</u>	<u>31% / 31%</u>
Subtotal	<i>389 / 253</i>	<i>23% / 15%</i>

Source: SFMTA 2007 Trip Activity Reports, Fehr & Peers.

As a means to determine the amount of available space for each regional transit provider, capacity utilization is also used. For all regional transit operators, the capacity is based on the number of seated passengers per vehicle. All of the regional transit operators except BART have a one-hour load factor standard of 100%, which would indicate that all seats are full. BART has a peak period load factor standard of 115%, which indicates that all seats are full, and an additional 15% of the seating capacity is standees (i.e., 1.15 passengers per seat).

Regional transit service was also evaluated at the screenline level. Screenlines were evaluated for the locations where different regional transit service enters San Francisco, including the North Bay (Golden Gate Transit and ferries), East Bay (BART, AC Transit, ferries), and South Bay (BART, Caltrain, SamTrans). The capacity utilization for each of the three regional screenlines is presented in Table 2.1.5-8. As shown, regional transit service between San Francisco and the East Bay is currently over its seated capacity; however, since BART can accommodate a substantial number of standees, this excess transit demand is accommodated during peak hours.

Table 2.1.5-8. Transit Ridership and Capacity Utilization at Regional Screenlines Existing Conditions—Weekday PM Peak Hour		
Screenline/Peak Hour	Ridership	Capacity Utilization
East Bay	20,204	102%
North Bay	2,303	59%
South Bay	12,106	83%
Total All Screenlines	34,613	90%
Source: SFMTA; AECOM 2009.		

BICYCLE CONDITIONS

Several existing bicycle facilities are located in the study area. These facilities include municipal routes that are part of the San Francisco Bicycle Network, and regional routes, part of the San Francisco Bay Trail system. Bikeways are typically classified as Class I, Class II, or Class III facilities. Class I bikeways are multi-use shared paths with exclusive ROW for use by bicyclists and pedestrians. Class II bikeways are bike lanes striped with the paved areas of roadways and established for the exclusive use of bicycles, while Class III bikeways are signed bike routes that, like all roads, allow bicycles to share travel lanes with vehicles but often are designed with heightened sensitivity to bicyclists. Figure 2.1.5-1 presents the bicycle routes within the study area, as identified in the Official San Francisco Bike Route System.

PEDESTRIAN CONDITIONS

Pedestrian facilities vary within the study area between the areas on the east side of Third Street and the industrial land uses surrounding the Caltrain rail corridor on the west side of Third Street. On the west side of Third Street, many of the commercial facilities surrounding the railroad mainline have partial or no sidewalks. Several of the streets in this area have active and inactive railroad tracks and many of the former industrial and storage buildings in the area retain large raised freight loading/unloading platforms abutting the street.

On Third Street and on the residential streets immediately surrounding Third Street, the sidewalk network is adequate and relatively complete. In the light manufacturing areas surrounding Yosemite Slough, the sidewalk network is less complete and frequently obstructed by illegally parked vehicles and/or loading vehicles. The condition and usability of the sidewalks generally decrease closer to Yosemite Slough (within the Study area).

The CPSRA has a network of existing multi-use trails that extend from the County Line to a point just southeast of the intersection of Gilman Avenue and Donahue Street (an as

yet undeveloped 'paper' street). Most of these paths are within the park and do not intersect the local roadways, although some connect to, or are part of, the Bay Trail.

PARKING CONDITIONS

In general, on-street parking in the transportation study area is generally unrestricted (other than weekly street cleaning), and is typically permitted on both sides of the street. On the wider avenues in the study area (generally with an 80-foot wide ROW) with light industrial land uses, roadways, such as Donner Avenue and Bancroft Avenue between Jennings and Hawes Streets, accommodate 90-degree perpendicular parking. Along Third Street, on-street parking is metered, and has been removed in the vicinity of the light rail stations. There are no Residential Permit Parking areas within the study area.

There are no city-owned off-street parking facilities in the study area. There are a limited number of privately-owned parking facilities in this subarea and most drivers rely on on-street parking. The available privately-owned off-street parking facilities serve the employees and visitors to the businesses adjacent to them and are not available for general public parking.

Development of Future Year Travel Forecasts

Background travel forecasts were produced for the future year 2035 to demonstrate the transportation effects both with the Project (Build Scenario) and without the Project (No Build Scenario). The 2035 PM peak hour background travel forecast was taken directly from the 'Future Year 2030' scenario documented in the CP-HPS Transportation Study. The future year 2030 scenario was developed via a multi-step process which used the San Francisco County Transportation Authority's (SFCTA) San Francisco Chained Activity Modeling Process (SF-CHAMP) model and overlays for individual nearby projects not included in the SF-CHAMP to forecast background traffic growth on study area roadways. Because several approved and proposed projects in the southeast area are more intensive than what is included in the SF-CHAMP land use assumptions, the SF CHAMP assumptions were removed and the trip generation and assignment forecasts from the projects' individual transportation studies was overlaid. The following local projects were included as part of this process (Source: TIS Figure 18, page 67):

- Candlestick Point (Approved)
- Hunters Point Shipyard (Approved)
- Executive Park (Approved)
- Visitacion Valley (Approved)
- Hunters View (Approved)
- India Basin (Proposed)
- Brisbane Baylands (Proposed)
- Cow Palace (Proposed)

Combined, these projects would add approximately 20,800 new residential units and approximately 14.3 million square feet of commercial space (e.g., retail, office, R&D, hotel, warehousing, community spaces) to the area west of Third Street and Bayshore Boulevard between roughly Sierra Parkway in the City of Brisbane and Evans Street in the City of San Francisco. Additional details about the size of each of these eight development areas, including amount and types of uses and associated PM peak hour



Figure 2.1.5-1
Existing San Francisco Bicycle Route Network

vehicle trips generated, as well as the methodology used to capture the effect the BTI Project has on area travel demand and the development of the background travel forecasts for the year 2035 are included in the TIS (Source: TIS Section 4.2 15, pages 66-71).

2.1.5.3 ENVIRONMENTAL CONSEQUENCES

Traffic Effects

The addition of BTI Project roadway improvements would improve operating conditions at some locations when compared to 2035 No Build conditions. This is due to the BTI Project increasing capacity on key roadways, signaling study intersections, and improving transit service by implementing a BRT system, which in turn acts to reduce the number of CP-HPS Plan-generated vehicle trips. Table 2.1.5-9 presents a comparison of the intersection LOS analysis for the existing, 2035 No Build, and 2035 Build conditions for the weekday PM peak hour.

Table 2.1.5-9. Intersection LOS Existing and 2035 PM Peak Hour Conditions							
Intersection	Control	Existing		2035 No Build		2035 Build	
		Delay	LOS	Delay	LOS	Delay ⁵	LOS
1. 25th St/Pennsylvania	AWSC	12	B	>80/1.42	F	40 ⁴	D
2. Third St/25th St	Signal	16	B	>80/2.93	F	>80/2.92	F
3. 25th St/Illinois St	AWSC	7	A	14	B	14	B
4. Cesar Chavez/Evans	Signal	21	C	>80/1.63	F	>80/1.63	F
5. Cesar Chavez/Penns/-	Signal	39	D	>80/1.37	F	>80/1.37	F
6. Third St/Cesar Chavez	Signal	31	C	>80/1.76	F	>80/1.76	F
7. Cesar Chavez St/Illinois	Signal	19	B	23	C	23	C
8. Evans/Napoleon/Toland	Signal	46	D	>80/1.85	F	>80/1.85	F
9. Third St/Cargo Way	Signal	20	B	>80/1.74	F	>80/1.74	F
10. Amador St/Cargo Way	Signal	12	B	59/1.04	E	59/1.04	E
11. Third St/Evans Ave	Signal	34	C	>80/1.76	F	>80/1.76	F
12. Third St/Jerrold Ave	Signal	23	C	>80/0.89	F	>80/0.88	F
13. Third St/Oakdale Ave	Signal	19	B	61/1.12	E	60/1.12	E
14. Third St/Palou Ave	Signal	27	C	>80/6.07	F	>80/3.22	F
15. Third St/Revere Ave	Signal	31	C	>80/1.15	F	>80/1.14	F
16. Third/Williams/Van	Signal	22	C	>80/0.99	F	>80/0.98	F
17. Third St/Carroll Ave	Signal	14	B	77/0.94	E	75/0.93	E
18. Third St/Paul Ave	Signal	24	C	>80/3.49	F	>80/3.36	F
19. Third St/Ingerson Ave	Signal	5	A	44	D	43	D
20. Third St/Jamestown	Signal	14	B	>80/6.65	F	>80/6.64	F
21. Third/Le Conte/US 101	Signal	11	B	23	C	23	C
22. Evans Ave/Jennings St	AWSC	10	B	>80/1.91	F	>80/1.88 ⁴	F
23. Innes Ave/A.Walker	SSSC ⁴	8.7(sb)	A	6 ⁴	A	6 ⁴	A
24. Innes Ave/Earl St	SSSC	8.6(sb)	A	19.5(sb)	C	19.4 (sb)	C
25. Innes Ave/Donahue St	AWSC	7	A	>80/1.08	F	27 ⁴	C

Table 2.1.5-9. Intersection LOS Existing and 2035 PM Peak Hour Conditions

Intersection	Control	Existing		2035 No Build		2035 Build	
		Delay	LOS	Delay	LOS	Delay ⁵	LOS
26. Crisp Ave/Palou Ave	SSSC ⁴	11.6(nb)	B	>80/1.17	F	>80/1.16 ⁴	F
27. Ingalls St/Palou Ave	AWSC	9	A	>50/1.57	F	22 ⁴	C
28. Keith St/Palou Ave	AWSC	9	A	44/1.02	E	8 ⁴	A
29. Ingalls St/Thomas Ave	SSSC ⁴	11.5(wb)	B	>50(wb)	F	33 ⁴	C
30. Ingalls St/Carroll Ave	AWSC	8	A	>50/1.84	F	38 ⁴	D
31. Ingalls St/Egbert Ave	AWSC	8	A	<10	A	9	A
32. A.Walker/Gilman Ave	SSSC ⁴	9.2(sb)	A	64/1.00 ⁴	E	35 ⁴	D
33. Harney	AWSC	8	A	62/1.14 ⁴	E	41 ⁴	D
34. Harney/Executive Park	SSSC ⁴	3.5 (sb)	A	>80/1.34 ⁴	F	26 ⁴	C
35. Alana W./Harney	AWSC	8	A	>80/1.41 ⁴	F	26 ⁴	C
36. Alana Way/Beatty Ave ⁶	AWSC	9	A	>80/3.89 ⁴	F	>80/3.89	F
37. Harney W./US 101 N. Ramps ⁶	Signal	9	A	>80/1.74	F	>80/1.74	F

Notes:

1. SSSC= Side-Street Stop Control; AWSC=All-way Stop Control; Signal=Signalized
2. Delay presented in seconds per vehicle. Intersections operating at LOS E or LOS F conditions highlighted in bold.
3. STOP-controlled intersection delay and LOS presented for worst approach. Worst approach indicated in ().
4. Signalized under the Project.
5. V/C ratio shown for intersections that operate at LOS E or F.
6. Intersection analysis assumes that the US 101 Geneva/Harney interchange, which is being planned and proposed as part of a separate project, is in place.

Source: Fehr & Peers, 2012

Implementation of the BTI Project would result in the improvement of the PM peak hour operating condition from unacceptable (LOS E or F) to acceptable (LOS A-D) at ten intersections.

Implementation of the BTI Project would not result in a change in intersection operations from LOS D or better under the 2035 No Build condition to LOS E or F, from LOS E to LOS F, or an increase in volume/over capacity ratio. Therefore, no adverse traffic effects were identified under 2035 Build conditions.

Freeway Effects

Traffic demand associated with cumulative development in the region would result in poor operating conditions at all analysis segments during the weekday PM peak hour. Table 2.1.5-10 presents the results of the freeway mainline and weaving section analysis for the 2035 No Build conditions. The BTI Project would not cause any freeway mainline segment to deteriorate from acceptable LOS D or better to LOS E or F conditions, nor would it cause any segment to deteriorate from LOS E to LOS F; therefore, no adverse traffic effects were identified under 2035 Build conditions.

**Table 2.1.5-10. Mainline and Weaving Segment LOS—2035 No Build and Build Conditions
Weekday PM Peak Hour**

Mainline Segment	Existing		2035 No Build		2035 Build	
	LOS ¹	Density ² (pc/mi/l _n)	LOS	Density (pc/mi/l _n)	LOS	Density (pc/mi/l _n)
US 101						
NB—Harney Wy to Third/Bayshore	E	42.3	F	>45	F	>45
NB—Sierra Point to Harney Wy	E	42.9	F	>45	F	>45
SB—Third/Bayshore to Harney Wy	E	36.0	F	>45	F	>45
SB—Harney/Geneva to Sierra Pt	E	36.8	F	>45	F	>45
Weaving Segment	LOS	Service ³ Vol. (pc/l)	LOS	Service Vol. (pc/l)	LOS	Service Vol. (pc/l)
I-280						
NB—25th St to Mariposa St	C	1,350	F	>1,900	F	>1,900
SB—Mariposa St to 25th St	E	1,630	F	>1,900	F	>1,900
Notes:						
1. Segments operating at LOS E or LOS F conditions highlighted in bold						
2. Density of vehicles per segment. pc/mi/l _n = passenger cars per mile per lane.						
3. For weaving sections service volume is reported as the measure of effectiveness. pc/h = passenger cars per hour						
Source: Fehr & Peers 2012.						

Ramp Junctions

Table 2.1.5-11 presents the results of the ramp junction merge (on-ramp) and diverge (off-ramp) analysis for 2035 No Build and 2035 Build conditions. Traffic demand associated with cumulative development in the region would result in poor operating conditions at each of the ramp junctions, with the exception of the northbound on-ramp from Bayshore Boulevard, and each is all expected to operate at LOS F under both 2035 No Build and Build conditions. The BTI Project would not cause any ramp junction to deteriorate from acceptable LOS D or better to LOS E or F conditions, nor would it cause any segment to deteriorate from LOS E to LOS F; therefore, no adverse traffic effects were identified under 2035 Build conditions.

Table 2.1.5-11. Ramp Junction LOS—2035 No Build and Build Conditions Weekday PM Peak Hour						
Ramp Location	Existing		2035 No Build		2035 Build	
	LOS	Density ¹ (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS	Density (pc/mi/ln)
US 101						
NB on from Harney Way ²	D	30.0	F	>45	F	>45
NB on from Bayshore	D	28.6	D	27.8	D	30.0
SB on from Third/Bayshore	C	26.5	F	>45	F	>45
SB on from Harney/Geneva ²	C	24.2	F	>45	F	>45
I-280						
NB off to Cesar Chavez	D	28.4	F	>45	F	>45
NB on from Indiana/25th	C	27.4	F	>45	F	>45
SB off to Pennsylvania/25th	E	36.7	F	>45	F	>45
SB on from Pennsylvania/25th	E	38.5	F	>45	F	>45
Notes:						
1. Density of vehicles per segment. pc/mi/ln = passenger cars per mile per lane.						
2. Cumulative 2035 No Build conditions assume the reconstruction of the Harney Way interchange, as well as the extension of Geneva Avenue from Bayshore Boulevard east to the reconstructed interchange.						
3. Ramp junctions at LOS E or LOS F conditions highlighted in bold						
Source: Fehr & Peers 2012.						

Transit Effects

Table 2.1.5-12 compares the overall screenline capacity for Muni service for existing conditions, 2035 No Build, and 2035 Build conditions for the three study area screenlines. Overall east-west transit capacity at the screenline just east of Third Street would more than double from existing to 2035 No Build conditions. Capacity would increase an additional 40% between 2035 No Build and Build conditions (primarily due to the extension of the BRT route into HPS). Transit capacity across the north screenline would increase by 70% between existing and 2035 No Build conditions, but would not change between No Build and Build conditions. Transit capacity across the west screenline would increase by 40% between existing and No Build conditions and by an additional 40% between No Build and Build conditions.

Table 2.1.5-13 summarizes the capacity utilization for each of the three screenlines for the PM peak hour for the existing, 2035 No Build and Build conditions. With the transit capacity increases associated with the BTI Project, the total transit travel demand on Muni under 2035 Build conditions could be accommodated for each of the three screenlines during the PM peak hour. Since the East of Third, North, and West screenlines would all operate within the capacity utilization standard during the PM peak hour, there are no adverse study area transit effects identified under 2035 Build conditions.

Table 2.1.5-12. Comparison of Capacity at Study Area Screenlines Existing, 2035 No Build and Build Conditions—Weekday PM Peak Hour

Screenline	Existing Capacity ¹	2035 No Build TEP Capacity ^{1,2}	2035 Build Capacity ^{1,3}
East of Third Screenline	1,715	2,858	3,988
North Screenline	2,085	3,546	3,546
West Screenline	2,033	2,872	4,002

Notes:

¹ Capacity presented in riders per hour. Inbound and Outbound Capacity the same – one direction of capacity presented.

² Year 2035 No Build reflects implementation of TEP recommendations for lines serving the study area plus the transit service improvements associated with the approved development of CP/HPS

³ Year 2035 Build conditions reflect 2035 No Build improvements plus the improvements described in the BTI Project TIS.

Source: SFMTA, Fehr & Peers.

Table 2.1.5-13. Ridership and Capacity Utilization at Study Area Screenlines Existing, 2035 No Build and Build Conditions—Weekday PM Peak Hour

Screenline	Existing		2035 No Build ¹		2035 Build	
	Total Ridership	% Util.	Total Ridership	% Util.	Total Ridership	% Util.
East of Third Screenline						
Inbound	389	23%	1,484	52%	2,002	50%
Outbound	253	15%	1,606	56%	2,092	52%
North Screenline						
Inbound	846	41%	2,704	76%	2,675	75%
Outbound	626	30%	2,405	68%	2,231	63%
West Screenline						
Inbound	711	36%	1,567	55%	1,938	48%
Outbound	824	42%	2,044	71%	2,374	59%

Source: Fehr & Peers.

Table 2.1.5-14 summarizes the capacity utilization for the downtown screenlines for the PM peak hour for the existing, 2035 No Build and Build conditions. Ridership would decrease slightly across the northeast, northwest, and southwest downtown screenlines for the 2035 Build scenario when compared to the 2035 No Build scenario. This can be attributed to some transit passengers shifting from Muni lines that cross the downtown screenlines to the BRT route introduced by the BTI Project in order to access BART. Since all of the screenlines would operate within the capacity utilization standard during the PM peak hour, there are no adverse downtown screenline transit effects identified under 2035 Build conditions.

**Table 2.1.5-14. Ridership and Capacity Utilization at Downtown Screenlines
Existing, 2035 No Build and Build Conditions—Weekday PM Peak Hour**

Screenline	Existing		2035 No Build		2035 Build	
	Total Ridership	% Util.	Total Ridership	% Util.	Total Ridership	% Util.
Northeast	1,886	52%	3,147	67%	3,140	67%
Northwest	6,621	65%	8,162	70%	8,155	70%
Southeast	4,668	66%	8,329	84%	8,223	83%
Southwest	<u>7,434</u>	<u>77%</u>	<u>8,829</u>	<u>82%</u>	<u>8,829</u>	<u>82%</u>
Total All Screenlines	20,609	68%	28,466	77%	28,347	80%

Source: Fehr & Peers.

Table 2.1.5-15 summarizes the capacity utilization for the regional transit provider screenlines for the PM peak hour for the existing, 2035 No Build and Build conditions. The increase and shift in transit passengers due to the BTI Project would contribute relatively imperceptible ridership increases to regional transit compared to 2035 No Build conditions. Regional screenlines would operate at the same percentage of capacity utilization under 2035 No Build and Build conditions. Although the East Bay and North Bay regional screenlines would exceed the capacity utilization standard, the BTI Project would not increase ridership (in the case of the North Bay) and would not substantially increase the utilization (in the case of the East Bay) at the impacted screenlines, thus there are no adverse regional screenline transit effects identified due to the BTI Project under 2035 Build conditions.

Two routes for BRT were analyzed in the CH-HPS Transportation Plan. Under one option, also the BTI Project Build Alternative, BRT service would run along existing Geneva Avenue and across US 101 via a proposed Geneva Avenue extension and existing Alana Way. A BRT facility would be constructed along the Harney Way extension/Egbert Avenue/Arelious Walker Drive then connect to Carroll Avenue. The BRT would continue as express bus service in mixed-flow traffic along Carroll Avenue, Ingalls Street, Thomas Avenue, and Griffith Street to Crisp Road to the Hunters Point Transit Center. The other option would continue the dedicated BRT facility using Arelious Walker Drive across a new pedestrian/bicycle/transit bridge across Yosemite Slough. As identified in Chapter 1, Section 1.4.5, the option of using the new bridge is not part of the BTI Project Build Alternative; however, as part of the CP-HPS Plan, it is assumed in the No Build conditions.

The CP-HPS Transportation Plan evaluated both options which provide similar levels of transit service. The BTI Project Build Alternative would be approximately two-thirds-mile longer than the other option and would attract approximately 15% fewer riders in the BRT segment between Candlestick Point and HPS. This estimated future difference in travel time and ridership for this one segment of the newly planned transit infrastructure in the project area would not decrease the overall benefit of the BRT component of the BTI Project Build Alternative.

**Table 2.1.5-15. Transit Trips and Capacity Utilization at Regional Screenlines
Existing and 2035 Conditions—Weekday PM Peak Hour**

Screenline	Existing		2035 No Build		2035 Build	
	Total Ridership	% Util.	Total Ridership	% Util.	Total Ridership	% Util.
East Bay						
BART	16,985	120%	30,250	154%	30,268	154%
AC Transit	2,517	60%	4,485	68%	4,485	68%
Ferries	<u>702</u>	<u>46%</u>	<u>2,147</u>	<u>79%</u>	<u>2,147</u>	<u>79%</u>
<i>subtotal</i>	<i>20,204</i>	<i>102%</i>	<i>36,882</i>	<i>128%</i>	<i>36,900</i>	<i>128%</i>
North Bay						
Golden Gate Transit	1,397	63%	2,513	114%	2,513	114%
Ferries	<u>906</u>	<u>53%</u>	<u>1,630</u>	<u>96%</u>	<u>1,630</u>	<u>96%</u>
<i>subtotal</i>	<i>2,303</i>	<i>59%</i>	<i>4,143</i>	<i>106%</i>	<i>4,143</i>	<i>106%</i>
South Bay						
BART	9,545	92%	10,683	76%	10,707	76%
Caltrain	1,986	61%	4,013	63%	4,008	63%
SamTrans	575	61%	391	42%	404	43%
Ferries	<u>=</u>	<u>=</u>	<u>75</u>	<u>25%</u>	<u>75</u>	<u>25%</u>
<i>subtotal</i>	<i><u>12,106</u></i>	<i><u>83%</u></i>	<i><u>15,162</u></i>	<i><u>70%</u></i>	<i><u>15,194</u></i>	<i><u>70%</u></i>
Total All Screenlines	34,613	90%	56,187	103%	56,237	103%

Source: Fehr & Peers.

Bicycle Effects

Many of the BTI Project roadways include bicycle facilities. These facilities play a key role in improving connectivity between the CP-HPS Plan area and the adjacent neighborhoods and bicycle circulation within the CP-HPS Plan area. These facilities are shown on Figure 25 in the TIS.

Connectivity to the adjacent neighborhoods would be improved via Class II facilities on gateway roadways such as Harney Way, which provide a connection to Brisbane Baylands and Visitation Valley and Jamestown Avenue and Innes/Evans Avenue. These, in turn, provide connections to Third Street and the T-Third light rail line.

The BTI Project would improve bicycle circulation internal to and between the Candlestick Point and HPS areas by providing Class II bicycle lanes on major thoroughfares including Gilman Avenue and Arelious Walker Drive in Candlestick Point and Donahue Street, Robinson Street, Fischer Street, and Crisp Avenue in HPS. Bicycle facilities on Crisp Road and Arelious Walker Drive would provide links to the Class I pathway that would connect Candlestick Point and HPS via the Yosemite Slough Bridge,

which will be constructed in conjunction with the CP-HPS Plan development, and is assumed in both the No Build and Build conditions.

The BTI Project proposes to make transit-supportive improvements that would promote expanded transit service (as part of the CP-HPS Plan) on Palou Avenue, which currently is classified as a Class III bicycle route from Phelps Street to Griffith Street. Promoting additional transit service may have the effect of increasing potential conflicts between buses and bicyclists. The City is supportive of moving the Class III facility to parallel streets with similar topography, Quesada Avenue or Revere Avenue, in response to the increase in transit service, as further described in Section 2.1.5.4.

The San Francisco Bicycle Plan calls for new Class II bicycle lanes or Class III route facilities on portions of Cargo Way, Illinois Street, Jennings Street, and Cesar Chavez Street. Although these projects are not included as part of the BTI Project, the BTI Project does nothing to preclude these projects in the future. Thus, since the BTI Project both adds new bicycle facilities and improves connection to adjacent neighborhoods, and does not conflict with the San Francisco Bicycle Plan, no adverse bicycle effects were identified under 2035 Build conditions.

Pedestrian Effects

The BTI Project proposes upgraded or new pedestrian facilities on all study segments. Sidewalks were designed to San Francisco Better Streets Plan standards of 12 foot minimum, where possible, and wider, where appropriate, such as retail areas or at transit hubs.

BTI Project roadway intersections internal to the CP-HPS Plan area would employ features to improve pedestrian safety, circulation, and reduce automobile-pedestrian conflicts such as curb extensions, intersection bulb-outs, raised crosswalks, and comprehensive way finding signs (which support a network of walkways and shared-use paths). Additionally, BTI Project roadways would include street trees, improved pedestrian lighting, and street furniture (where appropriate). All pedestrian facilities would meet Americans with Disabilities Act standards, including curb cuts at intersections and pedestrian push-buttons at signalized intersections (including countdowns for the deaf and hard of hearing and audible signals for the blind and seeing impaired).

Overall, by adding new pedestrian facilities, improving existing pedestrian facilities and improving pedestrian circulation in the study area, implementation of the BTI Project would have a beneficial effect on pedestrian conditions in 2035.

Construction Effects

Effects during construction will be minimal. For existing roadways, improvements would consist of repaving the street and the construction and installation of street lights, curb ramps, and street trees as necessary. For all new roadways or those undergoing major reconfigurations, these improvements include the installation of a new road bed, asphalt-concrete wearing surface, new curbs, curb-ramps, sidewalks, catch basins, signage, light poles and foundations, street trees, and underground utilities.

Many BTI Project roadways, particularly those within the CP-HPS Plan development area, would be constructed to coincide with development. Because of the phased nature

of CP-HPS Plan construction, the BTI Project would also occur over a 15- to 20-year period. During construction of the roadways, construction activities would generate traffic from construction workers, truck deliveries of supplies and construction equipment, and the hauling of soils during grading and street base work. Since the BTI Project is a roadway project, construction staging would mostly occur within existing rights-of-way. Construction staging would involve staging of construction vehicles, storage of construction materials, construction worker vehicles, delivery, and hauling trucks. While the exact routes that construction trucks would be using would depend on the location of the work, it is expected that Harney Way, Hunters Point Expressway, Innes Avenue, Evans Avenue, Cesar Chavez Street, and Third Street would be the primary routes between US 101 and the various components of the BTI Project.

The BTI Project includes the construction of new roadways and the rehabilitation/reconfiguration of existing roadways. With respect to the construction of new roadways, it is unlikely that construction operations would block travel lanes or pedestrian or bicycle travel, as the roadways do not currently exist (and thus cannot be blocked) and in many cases development would not occur adjacent to the roadway until construction of the roadway is complete. For existing roadways that would be modified as part of the BTI Project, most will undergo rehabilitation including paving, street base and sidewalk repair, and add amenities such as street trees or lighting, where appropriate. This process would be similar in scope to below grade utility work performed by the San Francisco Public Utilities Commission or street repair work performed by the San Francisco Department of Public Works. Construction activities generated by these improvements are generally short term in duration, generally programmed in a work document such as a Capital Improvement Program, and result in a temporary lessening of the capacities of local streets, rather than full closures, when possible; thus, they are not generally considered to result in effects. These minor effects will be mitigated by complying with the construction management plan developed for the CP-HPS Plan and complying with the Blue Book as described in Section 2.1.5.4.

2.1.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Project Phasing

The phasing plan for the BTI Project provided by the Project Team was developed based on discussions with City agencies and is consistent with the phasing plan provided for the CP-HPS Plan.

- Phase A, which is proposed to take place between 2013 and 2014 would focus on Cargo Way and Jennings Street.
- Phase B, which would occur between 2013 and 2021, would focus on the HPS area.
- Phase C, which would take place between 2013 and 2015, 2018 and 2019, and 2021, would focus on Bancroft Avenue, Ingalls Street and Griffith Street.
- Phase D, which would occur between 2018 and 2020, would focus around the Hunters Point Transit Center.
- Phase E, which would occur between 2014 and 2015, and 2021 and 2027, would focus around the Candlestick Point area.

- Phase F, which would take place between 2024 and 2025, would focus on Harney Way near the City of Brisbane/City of San Francisco border.
- Phase G, which would take place between 2015 and 2017, would focus on the more northern part of the project, along Cesar Chavez Street, Evans Avenue, and Illinois Street.

Consistency with SF Better Streets Plan Standards

The BTI Project was designed to be consistent with the San Francisco Better Streets Plan (San Francisco Planning Department, June 2008, adopted January 2011). The Better Streets Plan does not focus on specific neighborhoods in the city, nor does it describe individual projects. Instead, it develops “concepts” for the City’s different street typologies and presents specific design guidelines based upon a street’s ideal function. The Better Streets Plan articulates a set of goals for San Francisco’s streets that emphasize accessibility, connectivity, safety, sustainability, public health, aesthetics, diversity, and preservation of San Francisco’s history.

Americans with Disabilities Act Compliance

The BTI Project and its constituent features will be designed to be compliant with all ADA regulations. Several features have been included which contribute to the safety of road users and pedestrians; these include sidewalk bulb-outs at corners and bus stops, traffic signals, street lighting, new ADA curb ramps, and traffic calming features.

Consistency with SF Bicycle Plan

The BTI Project was designed to be consistent with the San Francisco Bicycle Plan. The certification of the San Francisco Bicycle Plan Final EIR was affirmed by the Board of Supervisors in August 2009. The San Francisco Bicycle Plan identifies near-term improvements that could be implemented within the next 5 years, as well as policy goals, objectives and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco. Funds for Bicycle Plan improvements are available from the State Bicycle Transportation Account and San Francisco Measure C funding. SFMTA, SFRDP, or SFDPW (under the direction of SFMTA or SFRPD) would implement improvements, depending on which entity has jurisdiction. The San Francisco Bicycle Plan includes six short-term projects, which would add bicycle lanes to Cargo Way, Illinois Street, Innes Avenue, Bayshore Boulevard, Cesar Chavez Street, and San Bruno Avenue and three long-term improvements to the Bay Trail in Hunters Point, Jennings Street, and Mendell Street.

These improvements would complete the bicycle route network envisioned for the study area in the Bicycle Plan, close network gaps, refine and rationalize the bicycle route network, and improve safety and the bicyclists’ experience. Design of these improvements would occur within the context of the bicycle route network, planned development characteristics, and roadway network configuration at the initiation of the design and review process for each improvement.⁹

As of August 2011, the San Francisco Planning Department, SFDPW, and SFMTA are in the process of refining designs for the inclusion of bicycle facilities on Cesar Chavez.

⁹ Refer to Section 4.3.3 of the TIS (pages 76-77) for full descriptions of the short-term and long-term bicycle improvements described in the San Francisco Bicycle Plan.

The long term alternative would retain the current auto/truck lane configuration, and add a Class I bicycle path via a cantilevered trail on the south side of the viaduct that connects Cesar Chavez Street and Evans Avenue. This configuration was assumed in the 2035 No Build and Build intersection analysis.

Bicycle Circulation on Palou Avenue

During final design of the BTI Project, the City will work with the San Francisco Bicycle Coalition to determine the preferred routing of the current Class III bicycle route on Palou Avenue in order to resolve potential circulation issues associated with increased levels of transit on Palou Avenue.

Construction Traffic Management Program

The BTI Project will follow the tenets of the CP-HPS Plan's Construction Traffic Management Plan program in order to mitigate any adverse effects related to its construction. The Construction Traffic Management Program will provide necessary information to various contractors and agencies as to how to maximize the opportunities for complementing construction management measures and to minimize the possibility of conflicting effects on the roadway system, while safely accommodating the traveling public in the area. The program, which sets the process by which construction coordination with the City of San Francisco and Navy shall be carried forward and how the management plan elements should be selected, is described in the TIS (Source: TIS Section, pages 117-118).

Prior to construction, the construction contractor(s) would meet with SFDPW and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles (e.g., during the concrete pour). The construction contractor would be required to meet the City of San Francisco's Regulations for Working in San Francisco Streets (the Blue Book), including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all city, state and federal codes, rules and regulations.

Coordination with this program would help minimize the CP-HPS Plan's construction-related transportation effects, and its contribution to cumulative construction related transportation effects. However, some disruption and increased delays could still occur even with implementation of the Mitigation Measure, and it is possible that construction-related transportation effects on local and regional roadways could still occur.

Traffic Management Plan

The Construction Traffic Management Program shall act as the Traffic Management Plan since the BTI Project largely consists of construction of new roadways or rehabilitation of roadways that serve low traffic volumes.

2.1.6 VISUAL/AESTHETICS

2.1.6.1 REGULATORY SETTING

NEPA establishes that the federal government use all practicable means to assure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings ([42 USC 4331(b)(2)]). To further emphasize this point, the Department, as assigned by the FHWA, in its implementation of NEPA (23 USC 109(h)) directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

2.1.6.2 AFFECTED ENVIRONMENT

The Bayview Transportation Improvements Project Visual Impact Assessment (VIA) prepared for the proposed BTI Project (December 2012) was conducted in accordance with the guidelines provided in FHWA's *Visual Impact Assessment for Highway Projects* (1981). The existing visual environment is characterized by the landscape components (visual resources) and viewer groups within the project area. Visual resources are described in terms of existing visual character and quality. Viewer groups are evaluated in terms of viewer exposure (the ability to see the project area), and viewer sensitivity, which refers to the viewers' concern for scenic quality and their response to changes in visual resources.

Project Setting

The BTI Project area is highly urbanized, and principally has paved roadways, sidewalks, planted medians, ornamental landscaping and street trees, traffic lights, streetlights, signage, and attendant infrastructure. A mixture of residential and industrial development occurs within, and directly surrounds the buffer areas around the BTI Project. Open space is located along the western shoreline of the San Francisco Bay and includes relatively flat terrain varying in width south of the Candlestick Point stadium and HPS, the CPSRA, and the Yosemite Slough.

The BTI Project area's terrain ranges from relatively flat to hilly landscapes. Elevations within the BTI Project area range from approximately 6 feet at Harney Way to 180 feet at Bayview Hill along the western side of the existing Candlestick Park. A steep rocky bluff along Innes Avenue reaches elevations of approximately 100 feet; however, most areas within the BTI Project area are less than 50 feet in elevation and are relatively level to moderately sloping hills.

According to Caltrans, there are no officially designated scenic highways in the County of San Francisco or in the BTI Project area (Caltrans 2007).

Landscape Units and Viewsheds

LANDSCAPE UNITS

A landscape unit is an element of the regional landscape that can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit will often correspond to a place or district that is commonly known among local viewers. The BTI Project contains major landscape units that can be classified into four types: residential, industrial, redevelopment, and public recreation and shoreline areas. These landscape units make up the study area.

Residential Landscape Unit

The residential areas of the proposed BTI Project are laid out in a standard grid-like pattern with street parking and made up of two story single-family attached housing units, with dispersed two-story apartments throughout the area, with the occasional street tree.

Industrial Landscape Unit

The industrial areas of the proposed BTI Project consist of two types:

- Industrial A areas generally consist of tall single story non-descript concrete structures laid out in a standard grid-like pattern within close proximities of one another. They have loading docks, drive through bays, and street parking with the occasional street tree.
- Industrial B areas are a deviation from the traditional industrial landscapes found in Industrial A areas. The area is home to industrial park-type uses that can be found along sections of the road adjacent to parking lots. Open landscapes, planted medians and street trees are present throughout the area.

Redevelopment Landscape Unit

The redevelopment areas of the proposed BTI Project consist of two types:

- Redevelopment A areas of the proposed BTI Project are generally made up of limited development. The area includes pavement, grasses, disturbed coastal scrub, and some serpentine rock outcroppings within the HPS.
- Redevelopment B areas of the proposed BTI Project generally consist of open landscapes alongside paved roadways, disturbed coastal scrub, and a small area of willow scrub near Alana Way and structures within the Candlestick Point area.

Public Recreation and Shoreline Unit

The public recreation and shoreline areas of the proposed BTI Project consist of two types:

- Public Recreation areas include local parks and open spaces surrounded by residential and other urban land uses.
- Shoreline areas make up the western shoreline of the San Francisco Bay. These areas are made up of primarily flat terrain of disturbed coast scrub and grasses surrounded by residential and other urban uses.

VIEWSHEDS

A viewshed is a subset of a landscape unit and comprises all the surface areas visible from an observer's viewpoint. A viewshed is defined by the visual limits of the views located from the proposed project. The viewshed also includes the locations of viewers likely to be affected by visual changes due to project features.

Within the four landscape units described above, viewsheds vary along the individual streets. The character of the vegetation can be generally described for the residential and industrial areas. Street trees are present in residential areas and, to a lesser extent, in industrial areas. Industrial areas also include occasional disturbed grasslands, coastal

scrub and other vegetated outcrops. For more information regarding each viewshed, refer to the VIA.

The Residential Landscape Unit has four viewsheds along Palou Avenue, Gilman Avenue, Ingerson Avenue, and Jamestown.

The Industrial Landscape Unit has six viewsheds in the Industrial A areas and eight viewsheds in the Industrial B areas. The viewsheds in the Industrial A areas can be found along Cesar Chavez Street, Crisp Road, Griffith Street, Thomas Avenue, Ingalls Street, and Carroll Street. The viewsheds in the Industrial B areas can be found along Evans Avenue, 25th Street, Illinois Street, Cargo Way, Jennings Street, Hunters Point Boulevard, Innes Avenue, and Harney Way.

The Redevelopment Landscape Unit has five viewsheds in the Redevelopment A areas and six viewsheds in the Redevelopment B areas. The viewsheds in the Redevelopment A areas can be found along Donahue Street and Robinson Street. An additional three new streets would be constructed in Redevelopment A areas that would provide new viewsheds: Spear Avenue, D Street, and Nimitz Avenue. The viewsheds in Redevelopment B areas would include Arelious Walker Drive, Harney Way Extension, Alana Way, Beatty Road, Arelious Walker Drive Extension, and Egbert Avenue.

The Public Recreation and Shoreline Landscape Unit has three viewsheds in Public Recreation areas and three viewsheds in Shoreline areas. The viewsheds in the Public Recreation areas include Gilman Park, Bayview Hill Park, and India Basin Shoreline Park. The viewsheds in the Shoreline Areas include the CPSRA, the Bay Trail, and areas adjacent to the CPSRA. These areas primarily consist of relatively flat open landscapes and include the CPSRA. The areas are adjacent to Redevelopment Areas, with Candlestick Stadium, HPS, and parking lots as the most prominent features nearby. The viewsheds within the Shoreline areas are limited by these structures to the west and by Alameda to the east.

Existing Viewer Groups

Viewer groups are groups of people who regularly travel through the project area or who have a certain degree of sensitivity to changes in the visual environment. Five viewer groups were identified within the study area and are discussed below.

COMMUNITY RESIDENTS

Only a small portion of community residents would have any long-term exposure to the BTI Project. Some residents on Bayview Hill, Hunters Point Hill, and Innes Avenue would have views of the BTI Project. Their views would be for long durations, and their awareness is expected to be high. Residents in many of the lower-elevation neighborhoods would see a reduction in traffic on their streets.

The viewer sensitivity of community residents would vary with their residential location. Residents on Bayview Hill, Hunters Point Hill, and Innes Avenue would have moderate to moderately-high viewer sensitivity. Other community residents would have moderately low viewer sensitivity because their exposure to the project would be limited.

RECREATIONAL AREA USERS

There are several distinct recreational uses in the BTI Project area. Bayview Park has natural areas and hiking trails. Although the BTI Project would be visible from this park, it

would be viewed in the middle-ground, views would be for relatively short duration, and viewer awareness would be low. Therefore, viewer sensitivity would be low.

The CPSRA has a number of activities, including fishing, windsurfing, picnicking, and nature watching. The BTI Project would pass by a portion of its border. People fishing and windsurfing would have relatively short duration views and little awareness of the project. Therefore, their viewer sensitivity would be low.

The BTI Project would pass next to India Basin Shoreline Park. This park has playgrounds and passive viewing areas. Some fishing occurs off the shoreline. Street safety enhancements and streetscape improvements are being developed for Innes Avenue and Hunters Point Boulevard in conjunction with the Bayview Hunters Point Redevelopment Project, HPS Redevelopment, India Basin Shoreline, and the Shoreline Special Use District. Views of the project from the India Basin Shoreline Park would be for a relatively short duration, but viewer awareness of the project would be high. Given the short duration of the views and the fact that the park is water-oriented, viewer sensitivity would be moderate.

BICYCLISTS

For the portions of the BTI Project located on bike routes, bike lanes have been included in proposed street layouts, where space permits. Duration of views of the project would vary. Bicyclists would be highly aware of traffic. Given the varying duration of views, the overall viewer sensitivity of bicyclists would be moderate.

BAY TRAIL USERS

Currently, a portion of the San Francisco Bay Trail is developed in part of the CPSRA. There are plans to extend the trail around Yosemite Slough, through the HPS, along India Basin Shoreline Park, and along Cargo Way. Some of the trail passes close to Hunters Point Expressway, although most attention would be directed away from the roadways and directed out to Yosemite Slough and San Francisco Bay itself. In the future, the trail would follow the shoreline of Yosemite Slough. Views would be for a relatively short duration. Given the short duration of the views and the Bay orientation of the trail, viewer sensitivity would be moderate.¹⁰

INDUSTRIAL AREA EMPLOYEES AND CUSTOMERS

The people who work or conduct business in the South Basin industrial area or in the HPS in the future would have views of the BTI Project for relatively short durations. These viewer groups would be highly aware of the BTI Project. Viewers would include employees and patrons of businesses that may be development consistent with the redevelopment plan. Although the BTI Project would be highly visible to these viewers, it would consist of roadways and transit facilities in the context of a newly urbanized setting. Viewer sensitivity would be moderate.

Existing Visual Character and Visual Quality

Existing land uses along the BTI Project route include a mix of residential and industrial uses. There is a shoreline park which abuts the length of the BTI Project site. The vast majority of the BTI Project site is developed, including roads, sidewalks, curbs, other

¹⁰ As discussed in Section 3.1.5 Transportation and Traffic/Pedestrian and Bicycle Facilities, because continuity is provided, under Section 4(f) regulations promulgated in March 2008 (23 CFR part 774.13(3)), it is excluded as a 4(f) resource.

paved surfaces, buildings, street trees, and ornamental and landscape plantings. Throughout the entire BTI Project area, infrastructure such as street lights, traffic signals, utility poles, and fences are common visual elements. Development such as homes, industrial structures, and paved roadways, in the BTI Project area dominate the visual landscape and limits most views to the foreground. Views in the vicinity are composed of urban residences, industrial buildings, open landscapes, roadways, and development features (wooden utility poles, fences, and transmission lines).

The existing visual quality of each landscape unit was evaluated based on indicators of the level of visual relationships, rather than judgments of physical landscape components. This approach provides a set of three evaluative criteria: vividness, intactness, and unity.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and human-made landscape of the immediate environs and its freedom from encroaching elements.
- **Unity** is the visual coherence and compositional harmony of the viewshed. The viewshed entails all natural and human-made features found within the normal view range.

The discussion below describes the general existing character and visual quality within each landscape unit that would be affected by the BTI Project.

RESIDENTIAL LANDSCAPE UNIT

Visual Character

Residential areas consist primarily of one-story over-garage, single-family attached homes up to the zero-foot lot line. Homes within residential areas are made of various architectural styles and are painted in an array of colors. Generally on any given residential street, there are sidewalks, travel lanes, signage, and parking lanes in both directions. A mixture of urban and residential development occurs within, and directly surrounds the BTI Project's residential areas.

Visual Quality

Within the residential streets, residential homes are painted with a range of colors that visually highlight the diversity of structures in the area. However, the paved areas are mostly devoid of vegetation, and power lines make up a large part of the visual features. The residential areas are visually compatible with its current surroundings. The existing visual quality is low.¹¹

INDUSTRIAL LANDSCAPE UNIT

Visual Character—Industrial Area A

Industrial A areas consist primarily of large and tall one-story concrete structures that front the zero-foot lot line and are equipped with loading docks and drive-through bays in the front or back of the buildings. Industrial A buildings are located within close proximity

¹¹ Refer to the VIA for a figure (page 16) which shows the typical street conditions along Gilman Avenue, located within the Residential Landscape Unit.

to one another, with residential streets and homes bordering the area. These areas are highly urbanized and generally have streets, with narrow sidewalks, unmarked travel lanes, and limited street parking in each direction.

Visual Quality—Industrial Area A

Within the Industrial A areas, the existing industrial structures lack visual connectivity to the surrounding landscapes. The close proximity of structures from one another further highlights the industrial setting. Structures are predominately painted white, creating a monotonous environment of concrete structures. The paved areas are mostly devoid of vegetation, and debris (e.g., plastic bags, paper, and other trash) is scattered along some of the roadsides. The existing visual quality of Industrial A areas is low.¹²

Visual Character—Industrial Area B

Industrial B areas consist of tall, two-story structures located within an industrial park-type setting. Buildings often have windows, are set back from the street, and are separated from one another by onsite parking lots. The areas are highly urbanized and consist primarily of paved parking lots, work/storage areas, buildings, roadways, sidewalks, planted medians, ornamental landscaping, street trees, traffic lights, streetlights, and signage. Generally on any given Industrial B street, there are sidewalks, parking lanes, and travel lanes in both directions. A mixture of residential development occurs within, and directly surrounds, the area.

Visual Quality—Industrial Area B

Within the Industrial B area, the industrial park-type area creates a visual environment that is devoid of connectivity to the surrounding landscapes. Structures are predominately white, creating a monotonous environment of concrete structures that are dispersed across this area. Vegetation is also scattered throughout the area and debris (e.g., plastic bags, paper, and other trash) is scattered along some of the roadsides. The existing visual quality of the Industrial B area is low.¹³

REDEVELOPMENT LANDSCAPE UNIT

Visual Character—Redevelopment Area A

Redevelopment A areas consist of limited development and primarily barren landscapes within the HPS. Some buildings remain, but are often vacant. Residential streets have not been fully developed within the shipyard, and a mixture of residential development occurs within, and directly surrounds, this area.

Visual Quality—Redevelopment Area A

Within the Redevelopment A areas, the paved areas are mostly devoid of vegetation, and lined with debris. The landscape is largely barren, and visual connectivity between this area and its residential surroundings is entirely absent. The remaining Navy buildings are vacant, deteriorated, and have decreased the overall visual quality of the area. There is also ongoing construction and remediation occurring within the shipyard. The existing visual quality of the Redevelopment A areas is low. Refer to the VIA for a

¹² Refer to the VIA for a figure (page 16) which shows typical street conditions at Ingalls Street at Wallace Street, located within an Industrial A area.

¹³ Refer to the VIA for a figure (page 17) which shows typical street conditions at Evans Avenue, located within an Industrial B area.

figure which shows typical street conditions at Donahue Street and at Cochrane Street, both located within a Redevelopment A area.

Visual Character—Redevelopment Area B

Redevelopment B areas consist primarily of paved landscapes, with Candlestick Stadium and its parking lots making up a large part of the urban landscape. A mixture of residential development and open space occurs within, and directly surrounds, this area.

Visual Quality—Redevelopment Area B

Within the Redevelopment B areas, the paved areas are mostly devoid of vegetation and lined with debris. Visual connectivity between the area and its residential and open space surroundings is entirely absent and is currently limited by the presence of the Candlestick Stadium, its adjacent parking lot, and satellite parking lots. The existing visual quality of the Redevelopment B areas is low. Refer to the VIA for a figure which shows typical conditions of Candlestick Stadium and its parking lot, located within a Redevelopment B area.

PUBLIC RECREATION AND SHORELINE LANDSCAPE UNIT

Visual Character—Public Recreation Areas

Public recreation areas consist of varied open landscapes and include Gilman Playground, Indian Basin Shoreline Park, and Bayview Hill Park. Playgrounds, sports fields, and open spaces are located within the areas. The areas are adjacent to residential, industrial, and redevelopment areas, with Candlestick Park Stadium and parking lots being the most prominent features nearby.

Visual Quality—Public Recreation Areas

The parks and open spaces adjacent to the project area offer some views of the San Francisco Bay, the East Bay Hills, and San Bruno Mountain. They add green components to the residential, industrial, and redevelopment areas in which they are located and provide some visual continuity with San Francisco Bay and the western shoreline. However, large portions of the park and open space areas are located adjacent to Candlestick Stadium and other urban components that limit the visual compatibility with its natural and residential surroundings. The view from the park and open space areas towards the project area is partially screened by trees and vegetation. The existing visual quality is moderate.

Visual Character—Shoreline Areas

Shoreline areas consist primarily of relatively flat open landscapes and include the CPSRA. Picnic sites, fishing piers, and trails are located throughout the area. The areas are adjacent to Redevelopment Areas, with Candlestick Stadium, HPS, and parking lots as the most prominent features nearby.

Visual Quality—Shoreline Areas

The open landscape along the Bayview shoreline, immediately south of Candlestick Stadium, offers panoramic views of the San Francisco Bay, the East Bay Hills, and San Bruno Mountain. The relatively flat terrain in this area adds green and water components to the area and provides some visual continuity with the San Francisco Bay. However, large portions of the park areas are paved for stadium parking and the proximity to

paved components limit the shoreline's visual compatibility with its natural surroundings. The view from the shoreline towards the project area is partially screened by pine and oak trees and other taller vegetation. The existing visual quality is moderate. Refer to the VIA for a figure which shows typical conditions of Yosemite Slough, located within the Shoreline Areas.

KEY VIEWPOINTS

Key viewpoints are typical views that people would have of or from the project. The VIA identified two key viewpoints, Harney Way and the future Arelious Walker Drive Extension. These viewpoints were chosen for their degree of visual change and representation of the visual character and visual quality of the BTI Project area. The existing conditions of each of the viewpoints are described below.

Harney Way Viewpoint

Harney Way is located in an Industrial B area of the project area and generally consists of tall, five to six-story structures (on the inland side of the street) set back from the street and separated from one another by on-site parking lots. Uses include residential and commercial land uses. The area is highly urbanized and consists primarily of paved roadways, sidewalks, ornamental landscaping and street trees, traffic lights, streetlights, and signage. On the Bay side of Harney Way is public open space including paved areas, a parking lot, and open, sparsely vegetated State Park lands adjacent to the Bay shoreline.

The existing ROW along Harney Way between Thomas Mellon Circle and Jamestown Avenue is approximately 80 feet and includes two travel lanes in each direction, a 6 to 8-foot north sidewalk. There is also an existing 1,000-foot long, 20-foot high multi-tiered retaining wall with ornamental landscaping along Harney Way immediately east of Executive Park Boulevard. The existing retaining wall is adjacent to residential developments and fronts Harney Way. Overall, the existing visual quality is low.

Future Arelious Walker Drive Extension Viewpoint

The future Arelious Walker Drive Extension is currently located in the redevelopment area of the project within the Candlestick Stadium area where the stadium and its parking lots make up a large part of the urban landscape. The future Arelious Walker Drive Extension is currently a 64-foot wide service road running between a sparsely vegetated slope and the stadium. The project consists of limited development with some ornamental landscaping and street trees to the west and the stadium to the east. The existing hillside consists of loose sedimentary rock and coastal scrub vegetation. Debris (e.g., plastic bags, paper, and other trash) is scattered along some of the roadsides. A mixture of urban and residential development occurs around this area. Visual connectivity between the area and its surroundings is entirely absent. Overall, the existing visual quality is low.

2.1.6.3 ENVIRONMENTAL CONSEQUENCES

The following section analyzes the potential visual effects of the proposed BTI Project within the landscape units that make up the study area. The methodology used to assess visual effects combines the two principal visual effect components: visual resource change and viewer response to that change. Visual resource change is analyzed in terms of visual dominance and other visual effects of facilities that would be constructed under the proposed BTI Project, together with the change in visual quality.

Viewer response to these changes is interpreted on the basis of the viewer types identified.

Ratings used for determining the extent of effects are defined as follows.

- **Low:** Minor adverse change to the existing visual resource with low viewer response to change in the visual environment. May or may not require mitigation.
- **Moderate:** Moderate adverse change to the visual resource with moderate viewer response. Effects can be mitigated within 5 years using conventional practices, such as plantings that would vegetate or screen construction cuts in a short period.
- **Moderately High:** Moderate adverse visual resource change with high viewer response, or high adverse visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than 5 years to mitigate. Such measures include planting trees that would take years to screen roadways of large cuts on slopes.
- **High:** High level of adverse change to the resource or high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the effects. An alternative project design may be required to avoid highly adverse effects.

Visual Resource Changes

As a result of the Build Alternative, there would be visual changes to each of the BTI Project viewsheds within the four landscape units. Refer to the VIA for a description of each of the visual changes. According to the VIA, two key viewpoints were identified for their degree of visual change and representation of visual character of the project: Harney Way and the proposed Arelious Walker Drive Extension. The visual changes to each of these viewsheds are described below.

- Harney Way—The existing ROW along Harney Way between Thomas Mellon Circle and Jamestown Avenue is approximately 68-80 feet. The ROW would be expanded to 120 feet to maintain two signalized lanes in each direction and include an eastbound left turn lane, an additional westbound travel lane, and a BRT lane in each direction. The new ROW would include a bicycle lane in each direction, 12-foot sidewalks, and a planted strip along the south, and medians. Approximately 138 trees will be removed and 80 trees will be replanted. A retaining wall on the north side of the Harney Way roadway is proposed between Thomas Mellon Circle and Executive Park Boulevard. The Harney Way retaining wall would be multi-tiered and approximately 600 feet long and 18 feet tall and would be built with similar material and landscaping as the existing wall east of Executive Park Boulevard. Individual tiers would be no more than 8 feet high.
- Arelious Walker Extension— The future Arelious Walker Drive Extension ROW would be 109 feet wide and would be constructed to include three travel lanes, a 12-foot sidewalk, a bicycle lane in each direction, and a 13-foot median. Improvements would also consist of the installation of a new road bed, asphalt concrete wearing surface, new curbs, catch basins, signage, and foundation, with a new separated sewer system, water lines, and other communications and power infrastructure being installed preceding all road work. Other improvements would include installation of curb ramps, street lights, and street trees as part of the overall design scheme for the project stated above.

As part of the redevelopment of Candlestick Point, the stadium will be removed and replaced by Candlestick Center, a mixed-use neighborhood with residential, commercial, office, and recreational uses. The removal of Candlestick Stadium in the future would require reconstruction of a 1,250-foot-long, 29.5 to 47-foot high (overall) single tiered east-side retaining wall along the future Arelious Walker Drive Extension. The eastern edge of the Arelious Walker Drive Extension would be the western edge of the planned future Candlestick Center and the location of the development's parking structure. The east-side retaining wall would be embedded into the west wall of the parking structure and would not be extended above the roadway.

The proposed 500-foot-long, 14 to 53 foot-high multi-tiered west-side retaining wall would also be constructed along the west side of the future Arelious Walker Drive Extension against the vegetated slope. The proposed west-side retaining wall would be substantially shorter than Candlestick Stadium's structures, which have been the dominant and familiar views in this area for many years. Individual tiers of the wall would be consistent with what already exists along Harney Way east of Executive Park Boulevard. Design of the proposed retaining wall includes native vegetation landscaping which would maintain some of the existing features of the vegetated slope and reduce the visual impact of the wall.

Visual Changes to Viewpoints and Effects on Viewer Groups

As described previously, two key viewpoints were identified for their degree of visual change and representation of visual character of the BTI Project area: Harney Way and the future Arelious Walker Drive Extension. The Build Alternative changes to these viewsheds were discussed above. This section describes the effects of these changes on the visual character and quality, the viewer response, and the resulting effects to these viewpoints.

KEY VIEWPOINT—HARNEY WAY

Change to Visual Quality/Character

Both the Build and No-Build Alternatives (where the No Build Alternative assumes CP-HPS Plan build-out, minus the transportation elements proposed by the Build Alternative) result in a change from a vegetated slope to one of retaining walls. The Harney Way retaining wall would be consistent with existing and future viewsheds. The proposed Harney Way retaining wall would be similar to the existing 1,000-foot long and 20-foot high retaining wall along Harney Way immediately east of Executive Park Boulevard. The proposed Harney Way retaining wall would be designed to be similar in height, material, texture, and landscaping to the existing wall, but would be substantially shorter in length. In addition, the approved development within the Executive Park Subarea Plan proposes a 600-foot long tiered retaining wall along Harney Way between Thomas Mellon Circle and Alana Way. Therefore, the proposed Harney Way retaining wall would be consistent with existing and future viewsheds along Harney Way and the construction of the retaining wall would only be an extension of the existing viewshed in this corridor and further west. Additionally, 138 trees would be removed and 80 trees would be replanted. Vegetation would be maintained on the slopes where feasible. New trees would be planted as part of the new landscaped median. This median would separate the main roadway from the BRT travel lanes and reduce the visual impact of the retaining wall.

Visual changes resulting from the No-Build Alternative would be the same as for the project.

Viewer Response

Residents would be moderately sensitive to changes in the visual environment resulting from the Build Alternative due to proximity to the project site and familiarity with existing views. Residents' views across an arterial roadway to a park, the bay, and beyond would be slightly modified by the roadway widening. For this particular view, the user groups for Harney Way include persons on Harney Way whose views of the proposed retaining wall would be temporary as they travel along the roadway or nearby. Therefore, there would be no discernible change to the viewsheds of residents or employees at the existing and future developments along Harney Way. The Harney Way retaining wall would be visible along Harney Way, but due to the temporary nature of the traveler's view and the surrounding existing and proposed retaining wall as part of the approved Executive Park expansion in the vicinity; it is not expected to create new adverse visual effects. The proposed Harney Way retaining wall would not obstruct existing views; it would be consistent with urban views to the north of Harney Way and would not conflict with San Francisco Bay views to the south. It would not result in a change in setting or context as the wall is partially obscured by a planted median within the roadway, ornamental landscaping immediately in front of it, and street trees. Therefore, the retaining walls would not adversely affect viewers as no static view is present and a number of similar retaining walls exist in this corridor. In addition, the Executive Park expansion would construct new buildings with retaining walls on the west side of Harney Way and be the dominant visual feature in the immediate area. Significant community involvement has been incorporated into the planning process for this project and for the adopted CP-HPS Plan and Executive Park project EIRs. The extensive community involvement has allowed this project to minimize community concern and protect existing viewsheds.

Resulting Visual Effect

Due to its visual consistency with existing and future views, the retaining walls are expected to have low to moderate visual effect levels. The retaining walls would be consistent with the existing viewshed along Harney Way and Executive Square Park and the future retaining wall between Thomas Mellon Circle and Alana Way, and the construction of the retaining walls would only be an extension of that viewshed towards Jamestown Avenue and Thomas Mellon Circle/Executive Park Boulevard. The loss of trees for the retaining wall is replaced with a vegetated tree lined 6 foot median. In addition, the retaining walls would only be visible from the roadway.

KEY VIEWPOINT—FUTURE ARELIIOUS WALKER DRIVE EXTENSION

Change to Visual Quality/Character

The primary change to visual quality would result from the removal of Candlestick Stadium and subsequent site development. Specifically, the project would result in a change from a sloped landscape to one consisting of a stepped retaining wall along the west side of Arelious Walker Drive Extension. However, coupled with development, the west side retaining wall would represent a continuous and parallel view of the development along the east side of Arelious Walker Drive Extension. The stepped retaining wall would limit disturbance to the slope, and allow native vegetation to be

maintained above the walls. The retaining wall surface treatment would complement the surrounding environment, and would include an anti-graffiti coating.

The east-side retaining wall will not affect the visual quality and character of the area as it will be embedded into the parking structure of the future development and will not be extended above the roadway.

Under the No Build Alternative, a roadway at Arelious Walker Drive Extension is still assumed to be built out, albeit with fewer lanes (as outlined in Section 1.4.3). Therefore, visual changes along Arelious Walker Drive Extension resulting from the No-Build Alternative would be similar to the project. Under Design Option B, the Arelious Walker Drive Extension would not be constructed, so there would be no changes to the existing slope and no resulting visual changes.¹⁴

Viewer Response

Viewers are likely to be sensitive to changes within and around their community because of the significant changes being made by the CP-HPS Plan. Residents would be moderately sensitive to changes in the visual environment resulting from the proposed BTI Project due to proximity to the project site and familiarity with existing views. However, the planned future development adjacent to the retaining walls, as outlined in the CP-HPS Plan, is a mall and parking structure.

The east-side retaining wall would not be visible to any viewer groups (motorists, transit users, park users, bicyclists, and pedestrians) and would not affect the visual quality or character of the project area. The proposed east-side retaining wall would not be visible to any residents or other long-term views. Therefore, the east-side retaining wall has no potential for visual impacts.

The west-side retaining wall would be visible to those traveling along or around Arelious Walker Drive and along Harney Way, including motorists, transit users, bicyclists and pedestrians. There would be no long-term viewers such as residents or employees. The west-side retaining wall is not expected to create adverse visual impacts for temporary viewers nor is the wall visible to shoreline and park users along the Bay Trail or other nearby recreational trails. The future parking structure and Candlestick Center along the east side of Arelious Walker Drive Extension replaces Candlestick Stadium as the dominant view. Therefore, the west-side retaining wall would represent a parallel and continuous view for users that extends from the east side parking multilevel parking structure to the west side. The west-side retaining wall would only be visible to Candlestick Center users from the development's newly constructed parking structure. Persons traveling along Arelious Walker Drive Extension would see a consistent extension of the existing views, which include the existing 1,000-foot-long retaining wall and the proposed 600-foot wall within the approved Executive Park Subarea Plan Area along Harney Way. The proposed west-side retaining wall would be consistent with the existing and future viewshed and would not change or block views. Therefore, there is no potential for visual impacts from construction of the west-side retaining wall.

In addition, significant community involvement has been incorporated into the planning process for this project and for the adopted CP-HPS Project EIR. The extensive

¹⁴ Refer to Design Option B, described in Section 1.4.1.8 *Design Option B*.

community involvement has allowed this project to minimize community concern and protect existing viewsheds.

Resulting Visual Effect

Due to its design and placement, the east side retaining wall would have low post construction visual impact levels as it would be embedded into the parking structure and would not extend above the roadway. The west side retaining wall would only be visible from the newly constructed parking garage and from future Arellous Walker Drive itself and is expected to have low post construction visual impact levels. It would be visible to temporary viewers and would not be visible to shoreline and park users along the Bay Trail or other nearby recreational trails. The future development would replace the stadium and its parking lots as the dominant view. The west-side retaining wall represents a parallel and continuous view that would be landscaped. Street trees would also be planted to reduce the impact of the development and the retaining wall.

2.1.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The design of retaining walls in the proposed roadway cross sections would avoid potential for visual effects. The Build Alternative proposes improvements that are consistent with the current surrounding environment. The existing condition is a sloped hillside between the roadway and a private parking lot and would require a retaining wall no higher than the existing height of the slope.

The Build Alternative would include landscaping (including street trees where appropriate) and the installation of street furniture, cohesive with the surrounding urban environment and protecting existing viewsheds. The installation of poles for lighting, signals and signage are consistent with existing visual/aesthetic conditions and mitigation is not required.

2.1.7 CULTURAL RESOURCES

2.1.7.1 REGULATORY SETTING

"Cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include the National Historic Preservation Act of 1966, as amended, (NHPA), which sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to take into account the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations (36 CFR 800) streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Pilot Program (23 CFR 327), effective July 1, 2007.

NEPA includes cultural resources preservation within its general policy for environmental protection. It requires the preservation of important historic, cultural, and natural aspects of our national heritage and maintenance, wherever possible, of an environment that supports diversity and a variety of individual choices. Cultural resources are considered in the preparation of all NEPA documents.

2.1.7.2 AFFECTED ENVIRONMENT

This section of the EA is based on the studies performed to identify and evaluate the potential for BTI Project effects on cultural resources, including the Historic Property Survey Report (HPSR) (Jones & Stokes 2007b), Addendum HPSR (ICF International 2012b), Archaeological Survey Report (ASR) (Jones & Stokes 2007a), Addendum ASR (ICF International 2012a), Historical Resources Evaluation Report (HRER), (Jones & Stokes 2007c) Addendum HRER (ICF International 2012c), and the Historic Property Treatment Plan (HPTP) prepared for the BTI Project.

AREA OF POTENTIAL EFFECTS

In accordance with NHPA Section 106, the Department and the City began studies for cultural resources by delineating two areas of potential effects (APEs), one for archaeological and another for architectural resources. The BTI Project APEs are located in the Bayview Hunters Point area in the southeast quadrant of the City. The APEs includes commercial and industrial buildings, as well as engineering features where pertinent.

The APEs for archaeological and architectural cultural resources include all existing ROWs and those parcels from which new ROW would be acquired where the BTI Project activities would take place. All parcel acquisitions and ROW takings, no matter how small, resulted in the inclusion of the entire affected parcel in the architectural APE.

The APE for archeological cultural resources extends beyond the architectural APE to include the boundaries for known archeological sites CA-SFR-7, CA-SFR-11, CA-SFR-110, and the Thomas-Hawes Mound.

Where the Build Alternative constructs sidewalk and sidewalk amenities' adjacent to industrial properties, those parcels have been included in the architectural APE to assess and evaluate the BTI Project's effect on potential historic industrial landscapes. An exception to this is a large parcel on Illinois Street, parcel 4304/002, where the industrial structures and landscape features were approximately 500 feet from the Build Alternative proposed sidewalk and sidewalk amenities and, therefore, too far from the potential architectural resources to include the parcel or any portion thereof in the architectural APE.

Roadway, sidewalk, and sidewalk amenities proposed by the Build Alternative within the existing roadway ROWs will not affect adjacent parcels where sidewalks already exist or where retaining walls, parks, or slopes visually separate the Build Alternative improvements from adjacent parcels.

ARCHAEOLOGICAL RESOURCES

The specific locations of archaeological resources are kept confidential to deter vandalism and desecration. Therefore, only generalized locations associated with the proposed BTI Project are provided in this section.

An ASR and Addendum to the ASR were prepared to document the efforts to identify archaeological resources and assess the potential for the discovery of buried cultural deposits. This included a sensitivity analysis for intact buried prehistoric and historical resources within the archaeological APE that relied on published maps, reports, and databases from the following sources.

- Historical Resources Information System, Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park
- Library of Congress
- California State Library
- California State Archives
- San Francisco Public Library
- Bancroft Library, University of California, Berkeley
- National Register of Historic Places
- California Register of Historical Resources
- California Inventory of Historic Resources
- California Historical Landmarks
- California Points of Historical Interest
- Cultural resource studies of locations within or in close proximity to the archaeological APE

The Native American Heritage Commission (NAHC) was contacted on August 3, 2005, for a search of its sacred land files and a list of local Native American organizations and

individuals. On August 9, 2005, the NAHC indicated that no sacred land sites were on file for the BTI Project area and provided a list of interested parties. On August 22, 2005, a letter was sent to all the organizations and individuals named on the NAHC list. On June 15, 2006, a letter was received from the Lytton Band of Pomo Indians, requesting that they be kept informed. No other correspondence has been received. A follow-up letter was sent to all the organizations and individuals named on the NAHC list, as well as the Lytton Band of Pomo Indians, on May 28, 2008. This follow-up letter updated the groups on the progress of the BTI Project and inquired about whether they had any information regarding cultural resources that may exist in or near the archaeological APE. No responses to the follow-up letter have been received. To evaluate the potential for buried cultural resources and locations of previously recorded archaeological sites, several sources were consulted, including topographic and soil information for the area; geotechnical boring logs; U.S. Geological Survey (USGS) topographic maps; and Natural Resources Conservation Service (formerly the U.S. Soils Conservation Service) soils, substratum, and landform descriptions. The geomorphic setting of known prehistoric sites in the vicinity was also considered.

An archaeological field survey was conducted in December 2005 to identify archaeological resources and examine the locations of all previously recorded archaeological sites within the BTI Project area. No new cultural resources were identified during the course of the field survey. The majority of the BTI Project area is developed, including paved areas, buildings, roads, and landscaping that precluded examination of the native ground surface in most areas.

Prehistoric Archaeological Resources

The NWIC records search revealed the presence of three previously recorded shellmound sites within the BTI Project APE boundaries: CA-SFR-7 (Bayshore Mound), CA-SFR-11 (Nelson Mound No. 390), and CA-SFR-110 (Griffith Shafter Mound). A possible fourth site, the Thomas-Hawes Mound, was also identified during the records search of the BTI Project area, but this site has not been formally recorded. The locations of the four known archaeological sites have not been subject to identification or evaluation for this study. However, based on prior archaeological testing at CA-SFR-7 by Banks (1981), it is known that prehistoric deposits exist at CA-SFR-7, CA-SFR-110, and the Thomas-Hawes Mound. CA-SFR-11 has not been subject to archaeological testing or evaluation since it was originally recorded by Nelson (1910). It should be noted that at the request of the U.S. Army Corps of Engineers (USACE), the SHPO concurred with USACE's determination that CA-SFR-7 was eligible for listing to the NRHP on November 18, 1981.

Historical Archaeological Resources

Although work to identify and evaluate historical archaeological resources has not been completed because of lack of access, there are several areas identified within the archaeological APE where historical archaeological properties that are potentially NRHP-eligible are expected to occur based on prior archaeological surveys and literature research. These areas are associated with: the Hunter Family Ranch House (Hunter House), which may have been a stagecoach stopover in the mid- to late 1850s; a Chinese shrimping village; and "Butchertown," which included a community of slaughterhouses, animal pens, corrals, outbuildings, and dwellings affiliated with the late 19th-century meat industry.

A PA (2008) between the SHPO and the Department has been developed as the guiding document for all cultural resources compliance procedures during the course of the BTI Project. As part of the PA, a HPTP was developed. Per this PA, and the HPTP, the next step in the identification process would be an Extended Phase I (XPI) proposal, which would culminate in the eventual XPI report. Based on the findings of this report, a determination of the potential for the BTI Project work to affect cultural resources would be reached. If no resources are found within the archaeological APE, the Section 106 process would be complete, pending approval of the SHPO. The purpose of the HPTP is to establish protocols for the evaluation and treatment of prehistoric and/or historical archaeological resources consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

HISTORIC ARCHITECTURAL RESOURCES

Historic architectural resources include districts, sites, buildings, structures, and objects that are included in or eligible for the NRHP. To assess the effects of the BTI Project on historic architectural resources, an HRER and Addendum to the HRER were completed that document the architectural identification and evaluation effort for the BTI Project.

Two previously unevaluated properties, 900 Palou Avenue and 3003 Third Street, were identified in the revised Architectural APE and addressed in the Addendum HRER. The identified and evaluated properties each include an industrial building constructed over 50 years ago. On March 5, 2012 Caltrans wrote SHPO requesting concurrence in accordance with Stipulation VIII.C.5 of the PA that the two additional properties are not eligible to the NRHP nor considered historic resources for purposes of CEQA. SHPO did not respond to the eligibility determinations and concurrence is assumed under provisions of the PA between Caltrans and SHPO regarding Section 106 compliance. The HRER prepared for the initial Project and approved by Caltrans included railroad features and a bridge. The only other buildings, structures, and site features within the revised Architectural APE that are over 50 years old are concentrated in the Hunters Point Shipyard (HPS), parcel 4591A/079, and include thirty five (35) buildings. The revised Architectural APE, however, does not include the entire HPS parcel nor does it include any portion of the Hunters Point Commercial Drydock and Shipyard Historic District within the HPS parcel. Furthermore, all of the buildings, structures and objects within the HPS parcel and encompassed by the Architectural APE have been previously evaluated and determined by the SHPO to not be eligible for inclusion individually or as a district to the NRHP or the CRHR. The HPS was evaluated by PBS&J in 2006 and by Circa Historic Properties Development in 2009.¹⁵

The Department followed a three-step process to investigate architectural resources in the architectural APE, including basic background research to establish the general historic context for the area; in-depth property-specific research; and onsite fieldwork to inspect and record resources in the APE.

Research was undertaken at the California State Library in Sacramento; the San Francisco History Center of the San Francisco Public Library; and the Department's cultural resources staff library. Property-specific research was conducted at the San Francisco Office of the Assessor-Recorder and the San Francisco Department of

¹⁵ San Francisco Redevelopment Agency and the City and County of San Francisco Planning Department, *Candlestick Point-Hunters Point Shipyard Phase II: Section III.J Cultural Resources and Paleontological Resources*, November 2009.

Building Inspection. A letter informing interested parties of the proposed BTI Project was sent to area historical societies and museums on September 13, 2005. The Department received no responses as of June 6, 2006. Intensive surveys were conducted in the field to account for all buildings, structures, and objects within the APE on October 6, 17, and 20, 2005, as well as May 31, 2006. Survey was again conducted on October 19 and November 28, 2011 for the Addendum to the HRER. This field survey helped to determine which buildings appeared to have been constructed before 1957, and therefore would need more detailed study for the BTI Project.

2.1.7.3 ENVIRONMENTAL CONSEQUENCES

ARCHAEOLOGICAL RESOURCES

Construction associated with the Build Alternative has the potential to disturb known archaeological sites (CA-SFR-7, CA-SFR-11, CA-SFR-110, and the Thomas-Hawes Mound) and potential historical archaeological features associated with the Hunters House, a Chinese shrimping village, and Butchertown. Damage to or destruction of potentially significant buried archaeological remains during construction would be an adverse effect under Section 106.

Should the Build Alternative design change, the following discussion of construction effects on known and unknown architectural and archaeological sites may not be valid; therefore, the level of effort at these locations may change.

Potential ground disturbance would be limited mostly to planting of new trees and placement of new streetlights every 25 to 30 feet, placement of new signal lights every 75 feet, and shallow excavation work associated with replacement of utilities (2 to 4 feet deep). Sewers would be replaced in the same vertical and horizontal locations if determined necessary. There would also be ground disturbance anticipated with the construction of a new Harney Way Extension near Candlestick Park.

There would also be some construction-related effects on known archaeological sites located within the archaeological APE. Construction-related effects of the Build Alternative are not planned within the recorded boundary of archaeological site CA-SFR-11; however, the site may extend north to Crisp Avenue and east to Arelious Walker Drive, where it could be affected by BTI Project work. It is unknown what depth the below ground surface CA-SFR-11 site may be encountered because there has been no testing for the boundaries of the site since it was first recorded in 1909. CA-SFR-110 may be affected by proposed street lighting, tree plantings, and replacement of sewers or other utilities up to 10-feet deep. The Thomas-Hawes Mound may be affected by streetscape construction, such as lighting, tree plantings, and a proposed 10-foot-deep excavation for the installation of a catch basin at this location. Finally, CA-SFR-7 may be affected by proposed street lighting, tree plantings, and replacement of sewers or other utilities. There is also a proposed catch basin that would require approximately 15 feet of excavation in the vicinity of CA-SFR-7.

It should also be noted that areas that may contain potential historic-era deposits have been identified along Crisp Road and between the Griffith Street/Arelious Walker Drive areas. Given that 2005 archaeological testing in the vicinity encountered historic-era archaeological deposits at various depths (5 to 20 feet) along Evans Avenue, it is possible that historic-era archaeological deposits along any of the southern roadways may be affected during shallow (5 feet or less) or deep (10 to 25 feet) excavations.

For the northern roadways, all work would be done within the existing ROW. Potential ground disturbance would be mostly limited to planting of new trees and placement of new streetlights every 25 to 30 feet, placement of new signal lights every 75 feet, and shallow excavation work associated with replacement of utilities (2 to 4 feet deep). Sewers would be replaced in the same vertical and horizontal locations if determined necessary. It should also be noted that historical research has shown that, with the exception of Cargo Way, which was constructed on fill in the 1940s and 1950s, most of the streets in the BTI Project area were used historically as roadways within their existing alignments. In 1917, the City instituted a major program of road building and reconstruction. Portions of Innes Avenue, Hunters Point Boulevard, and Evans Avenue were graded as much as 10 to 15 feet, while other areas were filled to create an even contour for these roads. Despite these facts, areas containing potential historic-era deposits have been identified along the entire extent of Evans Avenue. Given that recent archaeological testing in the vicinity conducted (Albion Environmental, Inc. 2005; report in progress) encountered historic-era archaeological deposits at various depths (5 to 20 feet) along Evans Avenue, it is possible that historic-era archaeological deposits along the northern roadways may be affected during shallow (5 feet or less) or deep (10 to 25 feet) excavations.

Previous research has indicated there is potential to encounter the historic-era deposits associated with historic Butchertown along Evans Avenue. However, recent work did not find evidence of it. Previous research has also indicated that a Chinese shrimping village was located at the corner of Innes Avenue and Hunters Point Boulevard (Olmstead et al. 1981). Further, historic photographs show that the intersection of Hunters Point Boulevard and Innes Avenue was the previous location of the Hunter House and that this area may have been filled during the reconstruction of Hunters Point Boulevard (Olmstead et al. 1981). If so, it is possible that archaeological remains, either structural or in the form of refuse deposits, may have survived at this location and could be encountered during ground-disturbing activities.

HISTORIC ARCHITECTURAL RESOURCES

The five architectural resources identified in the architectural APE are not historic architectural resources for the purposes of Section 106 of the NHPA. Therefore, there is no potential for effects on historic resources, and no mitigation is required. Because the resources are not eligible under Section 106, there would be no Section 4(f) use (49 USC 303) either.

2.1.7.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

A PA between the SHPO and the Department has been developed as the guiding document for Section 106 compliance (Caltrans 2008). Per this PA and the HPTP, the next step in the identification process would be an XPI proposal, which would culminate in the eventual XPI report. Based on the findings of this report, a determination of the BTI Project work to affect cultural resources will be reached. If archaeological resources are identified during the XPI phase, the procedures outlined in the HPTP would be followed. If no resources are found within the Archaeological APE, the 106 process will be complete, pending approval of the SHPO. The HPTP also includes provisions for accidental discovery, as specified below.

- If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.
- If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify NAHC who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the City so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

The City shall follow the process outlined in the HPTP for data dissemination, disposition of materials and records, and treatment of properties discovered during implementation of the proposed BTI Project and as outlined in the PA between the City, The Department, and the SHPO.

2.2 PHYSICAL ENVIRONMENT

2.2.1 HYDROLOGY AND FLOODPLAINS

2.2.1.1 REGULATORY SETTING

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. Requirements for compliance are outlined in 23 CFR 650 Subpart A.

The following was analyzed and included in the Location Hydraulic Study (WRECO 2011).

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the BTI Project

The base floodplain is defined as “the area subject to flooding by the flood or tide having a 1% chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

2.2.1.2 AFFECTED ENVIRONMENT

This section is based on the Location Hydraulic Study (LHS) and Summary Floodplain Encroachment Report (Encroachment Report) prepared for the BTI Project (November 2011) by WRECO. The Federal Emergency Management Agency (FEMA) has not published authoritative Flood Insurance Rate Maps (FIRMs) for the City. In July 2008, FEMA completed proposed FIRMs for the City, which are still under review and subject to revision. These preliminary FIRMs were based on a limited study of coastal flooding only and do not reflect the risk from flooding associated with runoff from large storms and inadequate drainage in some areas.

The preliminary FIRMs were used as the primary source of information for the delineation of the floodplain (i.e., the extent of flooding) associated with the “base flood” along the coast of the San Francisco Bay. The base flood is generally a flood or tide event with a 1% annual exceedance probability. A base flood is defined as a 1 in 100 chance that a flood event of equal or greater severity will occur in any given year. Typically the 1% probability of annual exceedance event is often called the “100-year” event (see Figure 2.2.1-1). FIRMs specifically identify the boundaries of a variety of different categories of Special Flood Hazard Areas (SFHAs), and the FIRMs distinguish the different SFHA categories as being different types of Zones. SFHAs associated with the 1% probability of annual exceedance floodplain are those Zone types that begin with the letter “A”, e.g., Zone A, Zone AE and Zone AO. Zones beginning with other letters are associated with higher intensity events with a smaller associated annual exceedance

probability. Zone C-type SFHAs, for example, are associated with the 0.5% annual exceedance probability flood event, which has often been called the “500-year” event.

There are four areas where the proposed FIRMs indicate that certain portions of the proposed routes will be within Zone A-type SFHAs (see Figure 2.2.1-1).

The encroachments are at the following locations.

- The Cargo Way crossing at the Islais Creek channel
- Evans Avenue at I-280
- Harney Way Extension where it crosses the Candlestick Park western parking lot
- Harney Way

No maps indicating flooding in areas other than along the coast of the San Francisco Bay were available when LHS and Encroachment Report was completed. Based on discussions with City staff, it was determined that areas upland from the coast of the Bay are subject to problematic flooding. In particular, the area surrounding Candlestick Park is subject to frequent inundation that interrupts traffic flow through the area, and this localized flooding often lasts several days.

The FIRMs were based on a study of coastal flooding, and the primary source of flooding indicated by the FIRMs is influx from high tide in San Francisco Bay.

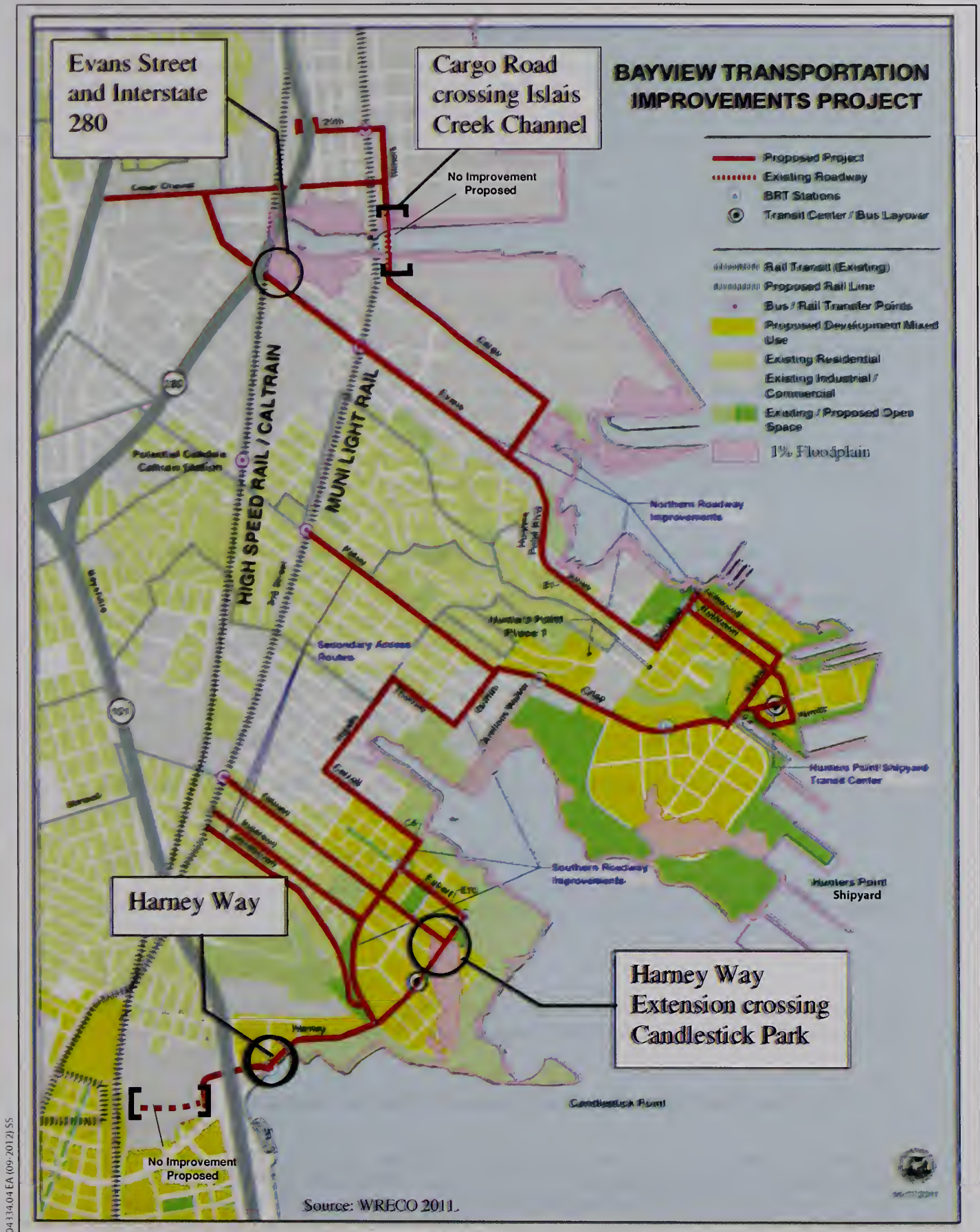
In addition, land use and topography in the area is consistent with a pattern that generally results in shallow flooding. Specifically, land use within the watersheds where the proposed routes would traverse is largely industrial and commercial as well as some residential, and these watersheds are generally built out. Consequently, they are already almost entirely covered by impervious surfaces (paved roadways, sidewalks and the roofs of buildings), which are already served by storm drain systems. Rainfall events in such areas result in rapid runoff with large peak flows that require adequate storm drain system interception in order to avoid ponding. These storm drain systems convey the runoff to outfalls that discharge directly into San Francisco Bay. Increases in the extent of impervious surfaces in such conditions will cause increases in peak discharge rates.

As defined by the Federal Highway Administration (FHWA), risk means the consequences associated with the probability of flooding attributable to an encroachment, which includes the potential for property loss and hazard to life during the service life of the structure.

2.2.1.3 ENVIRONMENTAL CONSEQUENCES

Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and ground water recharge.

The Natural Environment Study – Minimal Impacts (NES-MI) report prepared for the BTI Project (H.T. Harvey & Associates 2011) indicates that within the biological study area (BSA) there are no special-status wildlife species observed or expected to regularly occur or breed on the site. The NES-MI states that the BTI Project implementation is not expected to result in adverse effects on sensitive habitat types or special-status or



NOTE: The roadway network shown within the Hunters Point Shipyard south of Crisp Road represents one of several alternatives under the CP-HPS Transportation Plan. Additional alternatives can be found in the CP-HPS Transportation Plan.

Figure 2.2.1-1
Proposed Roadways Within the 1% Floodplain

wildlife species. The Build Alternative improvements would not affect jurisdictional wetlands and other waters of the United States or State regulated by the U.S. Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB). The BTI Project's study area is within the 100-foot shoreline band regulated by the State Bay Conservation and Development Commission (BCDC) and is regulated by the McAteer-Petris Act. The BTI Project would not change the location or severity of existing flooding patterns, would provide improved storm drainage facilities on BTI Project roadways, and would not have adverse effects on natural resources. No effects to the beneficial flood plain values would result from the BTI Project.

The BTI Project evaluation indicates flooding under the existing condition will have no substantial interruptions to any of the essential services (i.e., emergency supply of evacuation route, emergency vehicle access, practicable detour route, and school bus or mail routes), and the BTI Project will result in minimal interruptions to the same or lesser degree than the existing condition. The proposed work does not include components such as walls, barriers, embankments or encroachments that can affect existing flooding patterns. The proposed retaining wall at Executive Park on Harney Way would not affect the existing flooding because it is constructed parallel to the floodplain. All evacuation routes that are to some extent impassable during the 1% storm would be impassable to the same or lesser extent during the 1% storm in the proposed condition.

All of the roadway features proposed would be constructed at-grade and to City standards. The BTI Project, including the 4 floodplain encroachment areas at the Cargo Way Crossing at the Islais Creek Channel, Evans Avenue at I-280, the Harney Way Extension where it crosses the Candlestick Park western parking lot, and Harney Way, would not change the flooding extent or the water surface elevation relative to the existing condition, and would not increase the potential for property loss and hazard to life. Flood flows would continue to flow as in the existing condition due to the tidal floodplain. The BTI Project would improve substandard roads in the Candlestick Point area. Improvements will include improved storm drainage facilities.

Below are the proposed roadway improvements for the four BTI Project areas within the Zone A-type SFHAs:

The Cargo Way Crossing at the Islais Creek Channel

No improvements would be made on the Illinois Street Bridge. Farther south on Cargo Way, improvements would consist of repaving, installing new street lights, and adding curb ramps where necessary.

Evans Avenue at I-280

Along Evans Avenue between Cesar Chavez Street and Hunters Point Boulevard, the street configuration would remain unchanged, and improvements would consist of repaving the street.

Harney Way Extension where it crosses the Candlestick Park western parking lot

The Harney Way Extension would be constructed through the existing Candlestick parking lot. The width of the ROW would vary as the landscaped median would become a triangle "wedge" that would be at maximum 78 feet wide with an adjacent 12-foot bicycle lane. There would be additional 10 feet of landscaping on the west side of the

road. Also on the west side would be two BRT lanes, one southbound travel lane, and a 12-foot sidewalk. East of the wedge park would be one northbound travel lane, an 8-foot parking line, and a 12-foot sidewalk. Included in the roadway improvements are: installation of a new road bed, asphalt-concrete wearing surface, new curbs, curb ramps, sidewalks, catch basins, signage, light poles and foundations, and street trees.

Harney Way

On Harney Way, the roadway configuration would maintain two lanes in each direction, and include an eastbound left-turn lane, and additional westbound land, and a BRT land in each direction. The 80-foot existing ROW would be expanded to 120 feet to incorporate these changes, and a retaining wall would be constructed on the west side of the street adjacent to the private Executive Park development. Additional improvements consist of utility relocation, repaving, and the installation of new lighting, street trees, and curb ramps.

None of the proposed roadway improvements associated with the BTI Project would result in a significant encroachment on the base floodplain.

Construction of the proposed routes would result in an increase in the extent of impervious area by adding 14 acres of impervious area, which would increase peak runoff rates, volumes and durations. This increase in runoff would result in associated risk of flooding (local ponding); however, the BTI Project would eliminate this risk by including work to improve storm drain capacity. The BTI Project area is near San Francisco Bay, and the drainage is subject to tidal influence. Therefore, a hydromodification assessment is not required.

2.2.1.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The Build Alternative features would be entirely constructed at-grade and would not change the extent or water surface elevation of flooding relative to the existing condition.

2.2.2 WATER QUALITY AND STORM WATER RUNOFF

2.2.2.1 REGULATORY SETTING

Federal Requirements: Clean Water Act

In 1972 congress amended the Federal Water Pollution Control Act, known today as the Clean Water Act (CWA), making the addition of pollutants to the waters of the United States from any point source unlawful unless the discharge is in compliance with a NPDES permit. In the 1987 amendments, congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System (NPDES) permit scheme. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the United States to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. RWQCB administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States This permit program is administered by USACE.

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

There are two types of Standard permits: Individual permits and Letters of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE’s Standard permits. For Standard permits, the USACE decision to approve is based on compliance with the U.S. Environmental Protection Agency’s (USEPA) Section 404 (b)(1) guidelines (USEPA CFR 40 Part 230), and whether permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the USEPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have lesser effects on waters of the United States, and not have any other significant adverse environmental consequences. Per guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States In addition every permit from the USACE, even if not subject to the Section 404(b)(1)

guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the *Wetlands and Other Waters* section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the United States, like groundwater and surface waters not considered waters of the United States. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of total maximum daily loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, water pollution control, and water quality functions throughout the state. RWCQB are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program

MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water dischargers, including MS4s. The USEPA defines an MS4 as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. The SWRCB has identified the Department as an owner/operator of an MS4 by the SWRCB. This permit covers all Department ROWs, properties, facilities, and activities in the state.

The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Part of and appended to the Storm Water Management Plan (SWMP) is the Storm Water Data Report (SWDR) and its associated checklists. The SWDR documents the relevant stormwater design decisions made regarding project compliance with the MS4 NPDES permit. The preliminary information in the SWDR prepared during the Project Initiation Document (PID) phase will be reviewed, updated, confirmed, and if required, revised in the SWDR prepared for the later phases of the project. The information contained in the SWDR may be used to make more informed decisions regarding the selection of Best Management Practices (BMPs) and/or recommended avoidance, minimization, or mitigation measures to address water quality impacts.

CONSTRUCTION GENERAL PERMIT

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates stormwater discharges from construction sites which result in a Disturbed Soil Area (DSA) of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a Storm Water Pollution Prevention Plan (SWPPP): to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with Caltrans Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than 1 acre.

LOCAL AGENCY CONSTRUCTION ACTIVITY PERMITTING

For local agency 'off' state highway system (SHS) transportation projects, the local agency (as owner of the land where the construction activity is occurring) is responsible for obtaining a NPDES permit if required and for signing certification statements (when necessary). Local agencies contact the appropriate RWQCB to determine what permits are required for their construction activity.

For local agency 'off' SHS transportation projects, the local agency is responsible for ensuring that all permit conditions are included in the construction contract and fully implemented in the field.

SECTION 401 PERMITTING

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 Certification, which certifies that the project will be in compliance with State water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Local Design Standards

The SFDPW and SFMTA will comply with AASHTO standards during Project construction and operation, respectively. Permits are typically applied for following National Environmental Policy Act (NEPA) approval and when the design is far enough along to determine and calculate specific impacts. Since two to three months is normally required to process a routine permit application involving a public notice, local agencies are strongly encouraged to apply for permits as early as possible to allow sufficient time to obtain all necessary approvals prior to beginning construction. For large and complex projects, local agencies should request a “pre-application consultation” or informal meeting with USACE during the early planning phase of their project, and coordinate with the Caltrans District Local Assistance liaison in order to minimize the potential for delays.

Section 401 of the CWA requires water quality certification from the SWRCB or from RWQCB when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from USACE to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the NPDES permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Department activities on its highways and facilities. Department construction projects are regulated under the Statewide permit, and projects performed by other entities on Department ROW (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over 1 acre require a SWPPP to be prepared and implemented during construction. Department activities less than 1 acre require a Water Pollution Control Program.

2.2.2.2 AFFECTED ENVIRONMENT

This section summarizes the results of the Water Quality Assessment (WQA) (ICF 2012), including the regulatory setting, affected environment, potential effects, and avoidance, minimization, and mitigation measures proposed to reduce adverse effects on water quality from stormwater runoff as a result of the BTI Project.

Watershed

The study area is located in the San Francisco Bay Watershed, where the San Joaquin and Sacramento Rivers drain a 60,000-square-mile area of central California into the San Francisco Bay.

The Islais Creek Basin encompasses 10 square miles. Islais Creek originates in Glen Canyon, over 3 miles west and slightly north of the BTI Project site. The only remaining surface extents of the historic creek channel are in Glen Canyon and at the San Francisco Bay waterfront near the foot of Potrero Hill and Cesar Chavez Street.

The Yosemite Basin encompasses approximately 3 square miles. Yosemite Creek historically originated from a hilltop spring in McLaren Park and ran through what are now the Portola and Bayview neighborhoods before discharging into San Francisco Bay via Yosemite Slough.

Surface Water

The BTI Project study area is located in the southeastern portion of San Francisco, along the eastern margin of the San Francisco Bay, known as the Lower Bay. Freshwater flowing into the Lower Bay is limited and primarily caused by tidal action, resulting in poor water circulation and thereby adversely affecting water quality. Historically, creeks drained the eastern portion of the City and flowed into San Francisco Bay, and most of the study area was submerged. Over the past 100 years, however, the study area has been gradually filled in for development. The remnant creeks, sloughs, and basins are evident today along the bay margin.

Islais Creek is a tidal inlet located north of Cargo Way and is traversed by the Third Street and Illinois Street Bridges. In addition to limited flows from tidal action, the channel receives flows from treated wastewater from outfalls located near the head of the channel. During wet weather, when the capacity of the City's treatment plants is exceeded, combined sewer overflow (CSOs) are discharged to the bay through CSO structures that provide "flow-through treatment" along various points on San Francisco's bay side, including Islais Creek. See Figure 2.2.2-1 for areas within a combined sewer/stormwater system. See Figure 2.2.2-2 for the location of the Southeast Water Pollution Control Plant and discharge points for the CSO.

The channel also receives stormwater flows from a separate stormwater system under the jurisdiction of the Port of San Francisco. The system is located north and south of the channel. Surface water and shallow groundwater also flows into the channel from the adjacent to the channel banks.

India Basin is located just north of Hunters Point and includes a tidal marsh. The basin receives wet-weather CSOs when the City's treatment plant capacities are exceeded. In addition, it receives runoff water from the shorelines and stormwater runoff collected

from separate stormwater systems in a small part of this area. Shallow groundwater may also contribute to discharges into the basin.

Yosemite Slough is a tidal inlet with a tidal marsh along the head of the slough near Yosemite Avenue. Aside from limited tidal action within the slough, inflows are received from CSOs during wet weather and from runoff adjacent to the slough banks. Shallow groundwater may also discharge to the slough from the surrounding area (see Figures 2.2.2-1 and 2.2.2-2).

South Basin is located north of Candlestick Point. Yosemite Slough waters flow into South Basin, and it receives flows from separate stormwater systems southeast of Aurelius Walker Drive. Shallow groundwater may also contribute to discharges into the basin (see Figure 2.2.2-1).

Candlestick Cove is located southwest of Candlestick Point. It receives flows from a CSO outflow structure during wet weather, surface runoff from along the shoreline, and outflows from separate stormwater systems (See Figure 2.2.2-1).

Groundwater

The study area includes three groundwater basins: the Islais Valley Basin, South Basin, and Visitacion Valley Basin. Shallow groundwater in the study area occurs at depths from about 5 to 20 feet within the artificial fill along the bay margin. Groundwater in the study area is not used for meeting the water demand of San Francisco, which is met primarily from surface water sources outside the city boundaries and in part from westside groundwater basins on the west side of the City.

Existing Drainage

Stormwater drainage from San Francisco is almost entirely captured by the City's combined sewer system (CSS). Figure 2.2.2-1 shows areas within the Project boundary that are within a separated sewer system and areas within a CSS. The City is one of the few major cities in the country that operates a combined system in which sewage and stormwater (as well as industrial wastewater) flow in the same pipes. During dry weather, all the bayside flows are treated to secondary standards at the Southeast Water Pollution Control Plant (SEWPCP) and discharged to San Francisco Bay (see Figure 2.2.2-2). During wet weather, the SEWPCP and North Point Wet Weather Facility (NPWWF) treat some of the water to secondary levels and some to primary levels¹; these flows are discharged to the San Francisco Bay.

Approximately 10% of the City is served by separate storm sewer systems or is lacking storm sewer infrastructure. Existing separate storm sewer systems do not generally provide treatment prior to discharge to San Francisco Bay. The separate storm sewer systems (SSWS) are regulated under NPDES.

The portion of the BTI Project that has a SSWS is shown in the WQA. Most of the Candlestick Point-Hunters Point Shipyard Phase II Redevelopment Project (CP-HPS

¹ Primary treatment consists of removal of floatable and settleable solids from the wastewater by screening and sedimentation (i.e., physical means). For secondary treatment, biological and chemical processes are used to remove most of the organic matter from the wastewater.



Figure 2.2.2-2
Existing SFPUC Major Water Quality Features

Plan) area will be served by a SSWS; however, area along the shoreline drain directly to the Lower Bay via overland flow and subsurface migration of infiltrated water.

Water Quality

SURFACE WATER

The quality of surface water in the BTI Project study area depends on a variety of factors, including discharges from point sources (e.g., sewer outfalls or industrial outflows) into San Francisco Bay and non-point sources (e.g., surface runoff from storm events). In the study area, Islais Creek and Yosemite Slough are the main surface water features that could be affected by the proposed project. These small channels both receive discharges of combined treated sewage and stormwater during wet-weather conditions from CSOs. These discharges have been monitored by the City in compliance with the NPDES permit from the San Francisco Bay RWQCB.

Islais Creek has been listed by the San Francisco Bay RWQCB as an “impaired water body” in accordance with the requirements for such listings in Section 303(d) of the CWA. Section 303(d) requires that individual states prepare lists of impaired water bodies and determine TMDLs of contaminants that can be discharged into the impaired water body. Islais Creek has been listed as an impaired water body because of the presence of polychlorinated biphenyls (PCBs), chlordane, dieldrin, endosulfan, and polynuclear aromatic hydrocarbon compounds (PAHs) for sediments, and hydrogen sulfide and ammonia for water.

The Lower Bay has also been listed by the San Francisco Bay RWQCB as an “impaired water body” in accordance with the requirements for such listings in Section 303(d).

The San Francisco Bay Basin Plan describes beneficial uses as the services and qualities of a waterbody towards a nonwasteful use. The existing beneficial uses identified in Islais Creek are ocean/commercial/sporting fishing, estuarine habitat, wildlife habitat, water contact recreation, noncontact water recreation, and navigation.

SEDIMENTS

Regional sediment sampling is being conducted by the San Francisco Estuary Institute as part of its Regional Monitoring Program for Trace Substances. The sampling occurs throughout San Francisco Bay; none of the sampling locations are near the study area. The SWRCB also conducted or reviewed sediment quality data as part of its Bay Protection and Toxic Cleanup Plan for sites throughout the bay.² The western portion of Islais Creek was listed as a toxic hotspot because of sediment contamination and effects on aquatic life. The chemicals of concern included PCBs, chlordane, dieldrin, endosulfan, hydrogen sulfide, ammonia, and PAHs.

In 2004, the SFPUC prepared a study to evaluate whether sediment contaminants posed an unacceptable risk to possible future wetlands ecology around Yosemite Slough.³ The study indicated that surface sediments had concentrations of PCBs ranging from 85 to 1,317 micrograms per kilogram (µg/kg) and that PCBs, DDT (dichloro-

² State Water Resources Control Board, 1999, Consolidated Toxic Hot Spots Cleanup Plan, June.

³ SFPUC, 2004, Draft Final Sediment Investigation at Yosemite Creek, October 1998-May 2000, July.

diphenyl-trichloroethane), and mercury could have adverse effects on biological receptors. The depth of contaminated sediments appeared to be three to four feet.

GROUNDWATER

The quality of the shallow groundwater underlying the study area is influenced by the quality of the fill placed in the area, the native subsurface sediments and bedrock, and historic and current land uses that may have resulted in releases of hazardous substances. Hundreds of groundwater samples have been collected within or adjacent to the project area over the past 20 years. In general, groundwater contains chemicals above background concentrations north of Carroll Avenue, possibly including free-phased hydrocarbons.

The groundwater basins for the project site all contain potential and existing beneficial uses as evaluated by the California Department of Water Resources. Portions of the Islais Valley, Visitacion Valley, and South San Francisco groundwater basins underlie the BTI Project site. Existing designated beneficial uses are industrial service and process supplies. Potential beneficial uses of these groundwater basins include municipal and domestic supplies (drinking water) and agricultural supplies; however, the underlying groundwater is not suitable as a drinking water supply.

2.2.2.3 ENVIRONMENTAL CONSEQUENCES

This section describes potential effects on water quality that could result from the BTI Project. Construction activities may result in short-term effects, such as the input of sediment loads and spills into water bodies. Long-term effects include the increased potential for polluted runoff into water bodies. The following identifies the effects of the Project to the extent that they are reasonably foreseeable given the general level of Project detail that is available at this time.

Construction Effects

Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. Soil erosion potential would have minimal effect since the project takes place in a very urbanized area. Soil erosion potential would occur on pervious surfaces or during the installation of road beds when the previous surfaces are exposed to rainfall and construction activities.

In addition, during storm events erosion and sedimentation could occur at an accelerated rate. During construction of the Build Alternative, the total disturbed area would be approximately 14 acres; however, most of the construction takes place in impervious areas which has low erosion and sediment risk potential. Also, chemicals, liquid products, and petroleum products (such as paints, solvents, and fuels), concrete-related waste, and other construction debris and waste may be spilled or leaked, and have the potential to discharge into receiving waters.

There are no construction activities proposed at Islais Creek and Yosemite Slough. The existing roadway that crosses Islais Creek would be maintained during the duration of

the project and therefore, would have no adverse effect on the creek. There would be no construction on or near Yosemite Slough.

Under the Construction General Permit, the Project would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities. Construction BMPs would include, but not be limited to, Erosion and Sediment Control BMPs designed to minimize erosion and retain sediment on-site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

When construction BMPs are properly designed, implemented, and maintained to address pollutants of concern, as presented under *Avoidance, Minimization and/or Mitigation Measures*, then no adverse effects on water quality would occur during construction of the Build Alternative.

Long-Term Operational Impacts

Pollutants of concern typically generated during the operation of the Build Alternative include sediment/turbidity, nutrients, organic compounds, trash and debris, oxygen-demanding substances, bacteria and viruses, oil and grease, pesticides, and metals. Because the project consists of existing impervious improvements, it would result in a minimal permanent increase of impervious surfaces and a minimal permanent increase in runoff and pollutant loading.

Islais Creek and Yosemite Slough would not be affected by the minimal increase in runoff volume. As discussed in the previous section (*Construction Effects*), these waterbodies would not be affected by construction activities. Operation of the Build Alternative is subject to the requirements of the NPDES Permit.

Currently, stormwater runoff is captured by the City's combined sewer system within all areas of the project site with the exception of the Hunters Point Shipyard (HPS). The Build Alternative would construct a SSWS to serve the CP-HPS Plan area. Most of the existing combined sewer drainage inlets/catch basins within the boundary of the Candlestick Point area would be disconnected from the existing combined sewer system and connected to the proposed separated storm drainage system. There is no existing storm system within the HPS; however, the proposed separated storm drainage system would extend to the HPS. The separated storm drainage system would consist of Low Impact Design (LID) features to treat the 0.75-inch design storm, a 5-year piped collection system, and an overland release system.

LID features would act as treatment control BMPs, which can remove pollutants through natural means. LID strategies include, but are not limited to, infiltration trenches, vegetated swales, vegetated rock filters, bioretention devices, flow-through planters, permeable pavements, tree well filter units, and other LID technologies. The selection of LID features will be made through studies and through the design process and will involve the use of context-sensitive features that complement the proposed streetscape, open spaces, and accompanying Infrastructure. Runoff will be treated as defined by the San Francisco Stormwater Design Guidelines (SDG) before discharging into the 5-year piped system, which will flow via pump stations to San Francisco Bay.

Areas outside of the CP-HPS Plan area would drain into the existing combined sewer system and treated through the SEWPCP and NPWWF, which are discharged into San

Francisco Bay. The SEWPCP and NPWWF would act as treatment control BMPs, which are engineered systems that use physical, chemical, or biological processes to remove pollutants.

Pollutants from the Project would be treated through the implementation of various LIDs within the CP-HPS Plan area and existing treatment plants within the BTI Project boundary. When regulatory stormwater requirements are properly designed, implemented, and maintained to address pollutants of concern, as presented under *Avoidance, Minimization and/or Mitigation Measures*, the Build Alternative will have no adverse effects to water quality.

2.2.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

According to the WQA prepared for the BTI Project, short- and long-term effects on the quality of water resources in the area might occur during construction of the Build Alternative. Water quality measures (management measures and BMPs) are required to address water quality impacts during planning, design, construction, and operational and maintenance stages.

Key management measures are listed below.

- Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss.
- Minimize the potential for erosion via limiting land disturbances such as clearing and grading and cut/fill.
- Preserve any existing terrain providing desirable drainage courses or effective filtration.
- Limit disturbance of natural drainage features and vegetation.
- Prepare and implement an approved SWPPP.
- Ensure proper storage and disposal of toxic material.
- Incorporate pollution prevention into operation and maintenance procedures to reduce pollutant loadings to surface runoff.

As described below, compliance with federal, state, and local requirements for potential short-term (during construction) and long-term (post-construction/maintenance) effects is required.

1. Storm Water Pollution Prevention Plan: Combined Storm Sewer System. In compliance with the Article 4.1 of the Public Works Code and the City's Construction Site Water Pollution Prevention Program, the Project Applicant shall submit a site-specific SWPPP to the SFPUC for approval, prior to initiating construction activities in areas draining to the combined sewer system. The SFPUC requires implementation of appropriate BMPs from the California Stormwater Quality Association Stormwater BMP Handbook- Construction or the Department Construction Site BMPs Manual. In accordance with SFPUC's requirements, the SWPPP shall include:

- An Erosion and Sediment Control Plan that includes a site map illustrating the BMPs that will be used to minimize onsite erosion and the sediment discharge into the combined sewer system, and a narrative description of those BMPs. Appropriate BMPs for Erosion and Sediment Control Plan may include:

- Scheduling—Develop a schedule that includes sequencing of construction activities with the implementation of appropriate BMPs. Perform construction activities and control practices in accordance with the planned schedule. Schedule work to minimize soil disturbing activities during the rainy season. Schedule major grading operations for the dry season when practical. Monitor the weather forecast for rainfall and adjust the schedule as appropriate.
- Erosion Control BMPs—Preserve existing vegetation where feasible, apply mulch or hydroseed areas until permanent stabilization is established, and use soil binders, geotextiles and mats, earth dikes and drainage swales, velocity dissipation devices, slope drains, or polyacrylamide to protect soil from erosion.
- Wind Erosion BMPs—Apply water or other dust palliatives to prevent dust nuisance; prevent overwatering which can cause erosion. Alternatively, cover small stockpiles or areas that remain inactive for seven or more days.
- Sediment Control BMPs—Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, approved chemical treatment, and storm drain inlet protection to minimize the discharge of sediment. Employ street sweeping to remove sediment from streets.
- Tracking Controls—Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize onsite vehicle transportation routes immediately after grading to prevent erosion and control dust. Install a tire wash area to remove sediment from tires and under carriages.
- Nonstormwater Management BMPs that may include water conservation practices; dewatering practices that minimize sediment discharges; and BMPs for paving and grinding activities; identifying illicit connections and illegal dumping; irrigation and other planned or unplanned discharges of potable water; vehicle and equipment cleaning, fueling, and maintenance; concrete curing and finishing; temporary batch plants; implementing shoreline improvements and working over water. Discharges from dewatering activities shall comply with the SFPUC's Batch Wastewater Discharge Requirements that regulate influent concentrations for various constituents.
- Waste Management BMPs shall be implemented for material delivery, use, and storage; stockpile management; spill prevention and control; solid and liquid waste management; hazardous waste management; contaminated soil management; concrete waste management; and septic/sanitary waste management.
- SWPPP Training Requirements—Construction personnel will receive training on the SWPPP and BMP implementation.
- Site Inspections and BMP Maintenance—An inspector identified in the SWPPP will inspect the site on a regular basis, before and after a storm event, and once each 24-hour period during extended storms to identify BMP effectiveness and implement corrective actions if required. The SWPPP shall include checklists that document when the inspections occurred, the results of the inspection, required corrective measures, and when corrective measures were implemented. Required BMP maintenance related to a storm event shall be completed within 48 hours of the storm event.

2. Stormwater Pollution Prevention Plan: Separate Storm Sewer System. Consistent with the requirements of the SWRCB General Permit for Storm Water Discharges

Associated with Construction and Land Disturbing Activities (Construction General Permit), the Project Applicant shall undertake the proposed BTI Project in accordance with a project-specific SWPPP prepared by Qualified SWPPP Developer. The San Francisco Bay RWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the Construction General Permit issued by the SWRCB.

The SWPPP shall include, as applicable, all BMPs required in Attachment C of the Construction General Permit for Risk Level 1 dischargers, Attachment D for Risk Level 2 dischargers, or Attachment E for Risk Level 3 dischargers. In addition, recommended BMPs, subject to review and approval by the San Francisco Bay RWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the San Francisco Bay RWQCB's review process, since the San Francisco Bay RWQCB has final authority over the terms of the SWPPP.

- Scheduling:
 - To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season. Schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices.
 - Sequence construction activities to minimize the amount of time that soils remain disturbed.
 - Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work.
 - Install erosion and sediment control BMPs prior to the start of any ground-disturbing activities.
- Erosion and Sedimentation:
 - Preserve existing vegetation in areas where no construction activity is planned or where construction activity will occur at a later date.
 - Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, and/or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material) except in actively cultivated areas.
 - Install silt fences, coir rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, down-slope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation.
 - Install temporary slope breakers during the rainy season on slopes greater than 5% where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at spacing intervals required by the SFRWQCB.
 - Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets.

- Detain and treat stormwater using sedimentation basins, sediment traps, baker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives.
- Install check dams, where applicable, to reduce flow velocities. Check dams reduce erosion and allow sediment to settle out of runoff.
- Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows.
- Implement control measures such as spraying water or other dust palliatives to alleviate nuisance caused by dust.
- Groundwater/Dewatering:
 - Prepare a dewatering plan prior to excavation specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering.
 - Impound water produced by dewatering in sediment retention basins or other holding facilities to settle the solids and provide other treatment as necessary prior to discharge to receiving waters. Locate sedimentation basins and other retention and treatment facilities away from waterways to prevent sediment-laden water from reaching streams.
 - Control discharges of water produced by dewatering to prevent erosion.
 - If contaminated groundwater is encountered, contact the San Francisco Bay RWQCB for appropriate disposal options. Depending on the constituents of concern, such discharges may be disallowed altogether, or require regulation under a separate general or individual permit that would impose appropriate treatment requirements prior to discharge to the stormwater drainage system.
- Tracking Controls:
 - Grade and stabilize construction site entrances and exits to prevent runoff from the site and to prevent erosion.
 - Install a tire washing facility at the site access to allow for tire washing when vehicles exit the site.
 - Remove any soil or sediment tracked off paved roads during construction by street sweeping.
- Non-stormwater Controls:
 - Place drip pans under construction vehicles and all parked equipment.
 - Check construction equipment for leaks regularly.
 - Wash construction equipment in a designated enclosed area regularly.
 - Contain vehicle and equipment wash water for percolation or evaporative drying away from storm drain inlets.
 - Refuel vehicles and equipment away from receiving waters and storm drain inlets, contain the area to prevent run-on and run-off, and promptly cleanup spills.
 - Cover all storm drain inlets when paving or applying seals or similar materials to prevent the discharge of these materials.

- Waste Management and Hazardous Materials Pollution Control:
 - Remove trash and construction debris from the project area daily.
 - Locate sanitary facilities a minimum of 300 feet from receiving waters. Maintain sanitary facilities regularly.
 - Store all hazardous materials in an area protected from rainfall and stormwater run-on and prevent the off-site discharge of hazardous materials.
 - Minimize the potential for contamination of receiving waters by maintaining spill containment and cleanup equipment on site, and by properly labeling and disposing of hazardous wastes.
 - Locate waste collection areas close to construction entrances and away from roadways, storm drains, and receiving waters.
 - Inspect dumpsters and other waste and debris containers regularly for leaks and remove and properly dispose of any hazardous materials and liquid wastes placed in these containers.
 - Train construction personnel in proper material delivery, handling, storage, cleanup, and disposal procedures.
 - Implement construction materials management BMPs for road paving, surfacing and asphalt removal activities, and handling and disposal of concrete and cement.
- BMP Inspection, Maintenance, and Repair:
 - Inspect all BMPs on a regular basis to confirm proper installation and function. Inspect BMPs daily during storms.
 - Immediately repair or replace BMPs that have failed. Provide sufficient devices and materials (e.g., silt fence, coir rolls, erosion blankets) throughout project construction to enable immediate corrective action for failed BMPs.
- Monitoring and Reporting:
 - Provide the required documentation for SWPPP inspections, maintenance, and repair requirements. Personnel that will perform monitoring and inspection activities shall be identified in the SWPPP.
 - Maintain written records of inspections, spills, BMP-related maintenance activities, corrective actions, and visual observations of offsite discharges of sediment or other pollutants, as required by the SFRWQCB.
 - Monitor the water quality of discharges from the site to assess the effectiveness of control measures.
- Post-construction BMPs:
 - Revegetate all temporarily disturbed areas as required after construction activities are completed.
 - Remove any remaining construction debris and trash from the project site and area upon project completion.
 - Phase the removal of temporary BMPs as necessary to ensure stabilization of the site.

- Maintain post-construction site conditions to avoid formation of unintended drainage channels, erosion, or areas of sedimentation.
- Correct post-construction site conditions as necessary to comply with the SWPPP and any other pertinent San Francisco Bay RWQCB requirements.
- Train construction site personnel on components of the SWPPP and BMP implementation. Train personnel that will perform inspection and monitoring activities.

3. Compliance with General Permit. The BTI Project Applicant shall comply with requirements of the Municipal Stormwater General Permit, associated City SWMP, requirements of Article 4.1 of the San Francisco Public Works Code, and performance standards established by the SFPUC in the San Francisco Stormwater Design Guidelines.

The Draft San Francisco Stormwater Design Guidelines have been developed to satisfy the Municipal Stormwater General Permit requirements for new development and redevelopment projects in areas served by separate storm sewers, and were adopted in December 2009. The BTI Project Applicant shall comply with requirements of the Draft San Francisco Stormwater Design Guidelines. Upon adaption of the Final Stormwater Design Guidelines, the BTI Project shall comply with the Final San Francisco Stormwater Design Guidelines unless discretionary permits have been approved.

Per the Draft San Francisco Stormwater Design Guidelines, the BTI Project Applicant shall submit a Stormwater Control Plan (SCP) to the SFPUC, as part of the development application submitted for approval. The SCP shall demonstrate how the following measures would be incorporated into the BTI Project:

- Low impact development site design principles (e.g., preserving natural drainage channels, treating stormwater runoff at its source rather than in downstream centralized controls).
- Source control BMPs for landscaped areas shall be documented in the form of a Landscape Management Plan that relies on Integrated Pest Management and also includes pesticide and fertilizer application guidelines.
- Treatment control measures (e.g., bioretention, porous pavement, vegetated swales) targeting the BTI Project-specific constituents of concerns (COCs): sediment, pathogens, metals, nutrients (nitrogen and phosphorus compound), oxygen-demanding substances, organic compounds (e.g., PCBs, pesticides), oil and grease, and trash and debris. The SCP shall demonstrate that the BTI Project has the land available to support the proposed BMP facilities sized per the required water quality design. Volume-based BMPs will be sized to treat runoff resulting from 0.75 inches of rainfall, and flow-based BMPs will be sized to treat runoff resulting from a rainfall intensity of 0.2 inches per hour. The BTI Project Applicant shall prepare a SWMP for approval by the SFPUC. The SWMP shall include plans for the storm drain infrastructure and plans for stormwater management controls (e.g., vegetated swales, dry wells). The storm drain infrastructure shall illustrate conveyance of the 5-year storm event in a separate storm drain piped system, and conveyance of the 100-year storm event in the street and drainage channel ROWs.
- In accordance with the requirements of Article 4.1 of the *San Francisco Public Works Code*, an erosion and sediment control plan shall be prepared to prevent

contaminated water from entering the combined storm sewers. The plan shall be prepared by a licensed professional and be submitted to the SFPUC for review and approval prior to construction.

2.2.3 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

Information in this section was drawn from the Report of Geology/Soil/Seismic Conditions prepared for the BTI Project (Geotechnical Consultants, Inc. 2011).

2.2.3.1 REGULATORY SETTING

Federal Regulations

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.”

San Francisco General Plan

Geologic hazards, such as landslides, liquefaction, slope instability, ground shaking, fault rupture, and erosion are addressed in the *San Francisco General Plan*. The Community Safety Element of the General Plan includes policies for the avoidance of geologic hazards and/or the protection of unique geologic features. The plan requires detailed site-specific geologic hazard assessments in areas delineated with geologic hazards (seismic hazards, landslides, and liquefaction). The General Plan Community Safety Hazard Mitigation, Section 2 includes several policies (Policy 2.1 through 2.12) which address potential geologic hazards.

2.2.3.2 AFFECTED ENVIRONMENT

This section addresses geologic and seismic issues associated with the proposed BTI Project.

Regional Geology

The alluvial, colluvial, and estuarine regional classifications of soil and rock deposits that underlie much of the Project vicinity occupy a structurally controlled basin within California's Coast Ranges Province. Late Pleistocene and Holocene sediments (less than 1.0 million years old) were deposited in the basin as it subsided. In the BTI Project area, these younger sediments comprise estuarine deposits of older bay mud, undifferentiated sediments, younger bay mud, and alluvial/colluvial deposits, all of which rest on a variety of bedrock types associated with the Franciscan Complex. The Franciscan Complex consists of a variety of distinct layered bedrock types that are interbedded and tectonically disturbed. The predominant Franciscan Complex rock types in the Project vicinity are serpentinite, sandstone, chert, shale, and greenstone. Within the BTI Project area, bedrock outcrops are predominantly serpentinite, chert, sandstone, and shale in the Hunters Point area, and chert, shale, and greenstone in the Candlestick Point area adjacent to the San Francisco Bay.

The Franciscan Complex structure north of Yosemite Slough is attributed to the Hunters Point shear zone. The Hunters Point shear zone is believed to be part of a major structural zone marked by shallow bedrock that extends across the peninsula and southeast into the bay. Within the BTI Project vicinity, the southwestern margin of the shear zone extends from the San Francisco Bay shoreline between Yosemite Slough and the southern base of Hunters Point in a northwest direction that approximately intersects US 101 east of, and adjacent to, Islais Creek. The shear zone is an old

structure, likely Jurassic in age, and is not considered an active fault by the California Geological Survey.

The Franciscan Complex structure south of the Hunters Point shear zone is attributed to what is referred to as the Central Highlands belt, which is bound by the Hunters Point shear zone to the north and the City College fault zone to the south. This belt includes Candlestick Hill at the southern end of the BTI Project study area.

The different soil and rock types that are predominant within the Project vicinity are presented in Table 2.2.3-1 and appear in the order of youngest to oldest in terms of years before present.

Table 2.2.3-1. Typical Project Vicinity Subsurface Geologic Conditions		
Geologic Era (Age)	Regional Classification	Soil/Rock Types
Historic (0–200 years)	Recent fill	Artificial fill
Holocene to Pleistocene (0–1.8 million years)	Alluvial, colluvial and estuarine deposits	Colluvium, alluvium, Younger bay mud, bay side sands, older bay mud, and older colluvium
Cretaceous to Jurassic (65–165 million years)	Franciscan Complex	Serpentinite, sandstone, shale, greenstone, chert, and greywacke
Source: Geotechnical Consultants, Inc. 2011.		

Soils and Sediments

The discussion below describes the soil and geologic units underlying the BTI Project area. The units are discussed from youngest to oldest, which approximates the vertical distribution from top to deeper units.

ARTIFICIAL FILL

Deposits of artificial fill blanket most of the BTI Project area, ranging from a few feet to approximately 30 feet in thickness. The artificial fill in the BTI Project area constitutes the primary base soil to support traffic loads. The fill is primarily granular in nature, with the majority comprising a heterogeneous mixture of sands and gravels, with minor layers comprising clay and silt. There are localized zones of fill in the BTI Project vicinity consisting of wood, glass, brick, concrete blocks, and other industrial debris. The density of the fill is wide ranging from loose to very dense.

SLOPE DEBRIS/RAVINE FILL

Within the BTI Project vicinity, undifferentiated deposits of alluvium/colluvium are found primarily in areas immediately adjacent to the base of bedrock exposures. Near the ground surface, these deposits are primarily slope debris and ravine fill consisting of clay to sandy clay, sandy silt, clayey to silty sand, clean sand, and silty. At greater depths, these deposits also occur as older colluvium that typically occurs between estuarine deposits and bedrock.

YOUNGER BAY MUD

Younger bay mud underlies artificial fill in the shoreline areas of the BTI Project area, ranging in thickness from a few feet to over 50 feet. The younger bay mud consists predominantly of high plasticity clay, with minor amounts of clay and sandy clay, silt to clayey silt, and clayey sand. The younger bay mud is typically soft, and highly

compressible, low strength, very low in permeability, and normally- to under-consolidated.

UNDIFFERENTIATED SEDIMENTARY DEPOSITS

A sequence of inter-bedded alluvial and marine sediments typically resides near the shoreline of the San Francisco Bay and extends beneath younger bay mud. Based on available borings, this unit consists primarily of alternating layers of silty sand, poorly graded sand, clayey sand, and occasionally sandy clay. The alluvial deposits within the unit are typically yellowish brown to dusky/grayish yellow, while the marine sediments are typically grayish green and dark greenish gray. The granular materials within this unit are typically fine to very fine grained sands that are medium dense to very dense.

OLDER BAY MUD

The older bay mud deposits in the BTI Project vicinity typically comprises light brown to gray-green, medium plasticity, stiff to very stiff, silty to sandy clay, clayey silt, and clayey to silty sand. The older bay mud is overconsolidated and contains occasional lenses of clean sand and fine gravel. Older bay mud is typically found between the bayside sands and bedrock. Maximum thickness of older bay mud deposits in the BTI Project vicinity exceeds 50 feet.

FRANCISCAN COMPLEX

The Franciscan complex is a mixed assemblage of lithologically distinct bedrock types that are tectonically disturbed. The Franciscan rock types in the Project vicinity are primarily of serpentinite, chert, shale, sandstone, and graystone.

Seismicity

The San Francisco Peninsula and Bay Area contain a number of active and potentially active faults that may affect the proposed BTI Project area. These faults include the San Andreas and Hayward-Calaveras, both of which have produced measurable historic ground motion and movement. Table 2.2.3-2 contains fault data for major faults within 30 miles of the BTI Project area. The data is based on the 2002 revised California fault parameters issued by the California Geological Survey (CGS).

Table 2.2.3-2. Active Faults

Fault Name (Branch)	Distance (miles) from Project Area	Fault Length	Maximum Earthquake Magnitude (Mw)^a
San Andreas			
Peninsula	6.6	53	7.2
North Coast South	10.8	118	7.4
San Gregorio			
North	10.7	68	7.2
Hayward			
South	12.0	33	6.7
North	12.4	22	6.4
Monte Vista–Shannon	21.3	28	6.7
Calaveras (Northern)	21.6	28	6.8
Rogers Creek	25.2	39	7.0

^a Mw = Moment Magnitude, which is directly related to average fault slip and rupture area.

2.2.3.3 ENVIRONMENTAL CONSEQUENCES

Groundshaking

Ground shaking is the most widespread effect of earthquakes and could impact every aspect of the BTI Project. Several active faults in the San Francisco Bay region could produce moderate to strong ground shaking at the BTI Project site. These faults most notably include the San Andreas, San Gregorio, and Hayward Faults. Strong ground shaking can produce inertial forces that could cause failure of structures and facilities.

Liquefaction/Lateral Spreading/Seismic Settlement

Liquefaction is a phenomenon in which sands lose their strength during an earthquake and become fluid and mobile. Consequences of liquefaction can include ground settlement, foundation failure, sand boils, and lateral spreading. Liquefaction is most likely to occur in saturated, loose to medium dense sands and silty sands.

Lateral spreading is a seismically induced ground failure that involves the displacement of blocks of ground down gentle slopes or toward a nearby free face such as a stream channel, river embankment, or a shoreline. Structural elements that extend through or across a zone of lateral spreading may be pulled apart or sheared.

Several street segments (i.e., Evans Avenue, 25th Street, Cesar Chavez [from Evans Avenue to Illinois Street], new streets along the northern shoreline in the HPS, Crisp Avenue, Griffith Street, Thomas Avenue, Ingalls Street, Carroll Avenue, Egbert Avenue, Gilman Avenue [from Griffith Street to Donahue Street], and Donahue Street) as well as the HPS Transit Center and the potential new power substation overlay variable artificial fill that has been identified as a zone of high liquefaction potential by the CGS. When subjected to moderate to strong ground shaking, relatively loose sandy deposits within the artificial fill may liquefy resulting in settlements, sand boils, loss of bearing capacity. As these zones of potential liquefaction lie within areas that slope toward the free-face of the San Francisco Bay shoreline, they also impose a risk of lateral spreading during

liquefaction. Liquefaction and related lateral spreading and seismic settlements may result in uneven roadways, pavement damage, damage to underground pipes/utilities, and grade separations between pavement and adjacent roadway structures/facilities (walls, medians, curbs/curb ramps, etc.). Typically, post-liquefaction settlement of loose sandy soils is on the order of 1% to 3% of the total liquefiable layer thickness, resulting in typical settlements on the order of 2 to 6 inches.

Fault Rupture

No active or potentially active faults are known to cross the BTI Project. Therefore, the hazard posed by ground rupture due to fault offset is considered negligible.

Landslides/Slope Instability

CGS Hazard maps indicate that there is landslide potential near Innes Avenue, Ingerson Avenue, Jamestown Avenue, Arelious Walker Drive Extension, and Harney Way. Landslide hazard zones generally comprise relatively steep slopes containing exposed weathered, fractured, poorly consolidated, or adversely bedded Franciscan Formation rock.

Consolidation Settlements

Evans Avenue, 25th Street, Cesar Chavez (from Evans Avenue to Illinois Street), new streets along the northern shoreline in the HPS, Crisp Avenue, Griffith Street, Thomas Avenue, Ingalls Street, Carroll Avenue, Egbert Avenue, Gilman Avenue (from Griffith Street to Donahue Street), and Donahue Street as well as the HPS Transit Center all overly artificial fill that is underlain by soft younger bay mud, which is highly susceptible to consolidation settlement when subjected to new loading. It is likely that primary consolidation of the underlying younger bay mud from placement of historic areal fill has already occurred along the Build Alternative, and that most of the proposed BTI Project design modifications to these segments that do not significantly change the loading on basement soils would not induce significant settlements. However, where grade modifications (e.g., significant fill placement) or new structures (e.g., Transit Center structures, retaining walls) are anticipated within the Build Alternative segments underlain by bay mud, primary consolidation of the younger bay mud may occur which could result in uneven roadways, pavement damage, damage to underground pipes/utilities, and grade separations between pavement and adjacent roadway structures (e.g., retaining walls, Transit Center structures, curb ramps).

Corrosion

All improvements and facilities of the BTI Project that include buried or below grade steel or concrete elements are subject to corrosion. Subsurface structures (e.g., shallow and deep foundations, walls) or facilities (pipelines, etc.) composed of ferrous materials or concrete may experience rapid deterioration when constructed within corrosive soils, resulting in possible breach or structural failure.

Soil Erosion

Construction activities related to roadway improvements, such as removal of existing pavement, grading, road widening, etc., could expose areas of loose soil that could be subject to soil loss and erosion by wind and stormwater runoff during the construction period. Impacts of erosion include soil loss of roadway subgrades, pollution of

stormwater runoff, damage to stormwater drainage and collection systems, and excessive dust.

Construction Workers

Construction workers could be exposed to potential seismic hazards during BTI Project construction resulting in death or serious physical harm, since the Project is located in a seismically active region.

2.2.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Groundshaking

To evaluate the potential impact of ground shaking, a seismic study will be performed by a qualified Geotechnical Engineer to develop site-specific design ground motion parameters with respect to variations in the subsurface conditions within the BTI Project study area, and with respect to the probabilistic (or deterministic) seismic event (i.e., an earthquake produced by a nearby active fault such as the San Andreas, San Gregorio, or Hayward Fault). The impacts of ground shaking will be reduced by designing structures and foundations to withstand inertial forces imposed by ground motions associated with the design earthquake event in accordance with applicable codes and design criteria established by the seismic study.

Liquefaction/Lateral Spreading/Seismic Settlement

Employing ground improvement measures such as (1) over-excavation of liquefiable material and replacement with engineered fill, or (2) deep dynamic compaction, may reduce or eliminate the impacts of liquefaction beneath the Build Alternative roadways. For sites on which specific structures are proposed (e.g., HPS Transit Center and the power substation) mitigation measure such as stone columns, vibro-compaction, soil-cement columns, or jet-grouting may be considered to mitigate liquefaction impacts on structures and provide additional bearing support beneath foundations. Additionally, foundations can be designed to derive their support from competent soil/rock underlying the potentially liquefiable soil layers. The need for liquefaction mitigation, and the selection and design of appropriate mitigation schemes will be determined during the early design phase of the BTI Project after additional investigation and consultation has been performed.

Landslides/Slope Instability

Risks from landslides can be reduced by employing proven methods generally accepted by California Certified Engineering Geologists to reduce these hazards. To fully evaluate the risk and potential impacts of landslides, additional field mapping of the areas of concern will be performed during final design by a qualified Engineering Geologist and additional field exploration, soil/rock sampling and testing, and engineering slope stability analysis be carried out as needed. For slopes deemed unstable, corrective measures may include: (1) excavation and removal of the unstable mass and replacement with engineered fill keyed into the slope and benched as necessary; (2) rock bolting to stabilize adversely oriented and/or unstable rock masses; (3) construction of a soil nail wall; or (4) construction of a rock-fall catch fence, wall, or meshing/net to contain landslide debris.

Consolidation Settlements

Consolidation settlement of younger bay mud will be mitigated by preloading ("surcharging") areas that are expected to be subjected to new loading related to the BTI Project Build Alternative design improvements. Preloading the selected area will induce site settlement in advance of the roadway improvement construction so that final design grades are achieved without further consolidation. Surcharging is usually achieved by placement of temporary earth fill. The consolidation of the zone compressible soil (e.g., younger bay mud) is usually accelerated by enhancing the soil drainage through the placement of prefabricated wick drains.

Corrosion

Measures to reduce or eliminate the effects of soil corrosion on buried steel elements may include increased steel thicknesses, encasement with protective epoxy, and cathodic protection. Sulfate-resistant concrete will be used for concrete structures embedded in soils with high sulfate content.

Soil Erosion

Measures to control surface soil erosion during construction will include implementation of a SWPPP and use of BMPs for the construction sites. Installation of erosion control measures is typically the responsibility of the construction contractor and commonly includes the installation of drainage ditches, sediment basins, silt fences, erosion control blankets, straw bales, and plastic soil covers. Dust is typically controlled by spraying the ground with water, or a non-toxic soil stabilizer.

Construction Worker Safety

The Occupational Safety and Health Act (OSHA) requires employers to comply with hazard-specific safety and health standards. Pursuant to Section 5(a)(1) of the OSHA, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Potential seismic-related hazards to workers during construction are expected to be less than substantial with compliance with the OSHA and compliance with the Departments' standard design and construction guidelines.

2.2.4 HAZARDOUS WASTE/MATERIALS

This section summarizes potential effects from pre-existing hazardous materials in the subsurface, as identified in the Site History/Initial Site Assessment (ISA) (BASELINE Environmental Consulting 2011) prepared for the proposed BTI Project that could expose construction workers or the general public to health risks and that may require the implementation of special soil or groundwater management procedures.

2.2.4.1 REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous wastes. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- CWA
- Clean Air Act
- Safe Drinking Water Act
- OSHA
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is disturbed during project construction.

2.2.4.2 AFFECTED ENVIRONMENT

Data sources used to identify previous and current land uses that could contribute to the contamination of the project area are listed below.

- The Technical Report Site History/Initial Site Assessment prepared for the project, September 2011⁴

⁴ For the HPS, BASELINE relied on existing hazardous materials studies which are incorporated by reference herein.

- Historic Sanborn fire insurance maps
- Historical aerial photographs
- Site reconnaissance of the project area and vicinity
- Regulatory agency database information
- Review of available previous environmental and geotechnical investigation reports
- Hunters Point Shipyard's Records of Decision
- BTI Project Supplemental Hazardous Materials Information and Transportation Related Outreach Project, March 2012

Site Assessments

BASILINE Environmental Consulting conducted a site reconnaissance of the BTI Project study area (excluding HPS) on June 27, 2011, to identify areas of potential environmental concern from existing land uses. In general, the BTI Project study area is a mix of industrial and residential areas. No evidence of hazardous materials was observed within the residential areas along Palou, Ingerson, Jamestown, and the northern portion of Gilman avenues. The more industrial areas have many businesses that would be expected to use hazardous materials and generate and store hazardous waste, particularly along Ingalls Street and the northwestern portion of Evans Avenue. There are a number of gasoline service stations located in the northern portion of the study area, notably at 25th Street and Evans Avenue in the Third Street vicinity. Observations pertaining to potential hazardous material releases are summarized below.

Soil from an unknown source is stockpiled adjacent to the roadside along Gilman Avenue across from Candlestick Park. The soil appears to be stockpiled to form a berm around offsite parking areas for Candlestick Park. The soil contains substantial amounts of debris and, depending on the source, may contain elevated levels of contaminants.

In the area south of Arellous Walker Drive and northeast of Gilman, where Egbert Avenue would be constructed, there are numerous drums. The drums are located within a fenced area so a detailed inspection could not be conducted; however, the drums appear to be of a mix of older and newer drums, and a number of drums did not appear to be labeled. These drums could contain hazardous materials.

Along Arellous Walker Drive and the southeastern portion of Carroll Avenue, additional berms were observed adjacent to the roadway. These berms may contain soil and debris similar to the stockpiles observed along Gilman Avenue and may contain hazardous materials for the same reasons mentioned above.

Many small businesses were observed along Ingalls Street, which are involved in automotive repair and maintenance, including repair shops, body shops, and smog check facilities. A general lack of "good housekeeping" practices was observed, including evidence of waste discharge to the storm drain system. Additionally, what appeared to be containers of used oil and paint were observed abandoned along Ingalls Street, and dumped debris, including oily rags and empty oil containers, was observed at the corner of Thomas Avenue and Griffith Street.

Throughout the Bayview area, inactive rail tracks were observed either embedded in or adjacent to the roadways. These rail tracks may be remnants of the Navy's rail track or freight spurs and sidings that historically provided access to the Southern Pacific, Western Pacific, and Atchison Topeka and Santa Fe lines (BASELINE Environmental Consulting 2011). Elevated levels of metals and petroleum hydrocarbons are common along historic rail lines.

Exposed serpentinite rock was observed along Evans Avenue. Serpentinite rock contains asbestos and relatively high concentrations of arsenic, manganese, nickel, and other metals.

Sites Listed in Regulatory Agency Files and Databases

EDR, an environmental information service, conducted a search of federal, state, and local regulatory agency databases pertaining to hazardous material use and releases on properties at and near the study area (BASELINE Environmental Consulting 2011). The databases were searched for sites along a 250-foot corridor around the BTI Project road alignments. The complete environmental database reports are included as Appendix B of the ISA.

Of the 97 sites identified in the search reports, 44 sites had reported hazardous materials releases (Table 2.2.4-1 and Figure 3 of the ISA)⁵. The majority of the releases pertained to petroleum and related compounds from leaking underground storage tank (LUST) sites. Of the 38 LUST sites, 36 have been closed by the San Francisco Local Oversight Program or Regional Water Board, indicating that remediation of the sites had been completed or was not necessary. Of the eight nonunderground tank sites, two sites remain open, one of which is HPS. With the exception of sites with institutional controls (ICs), any residual contamination from the closed sites, if present, would not be expected to affect construction activities substantially. In addition to release sites identified in the regulatory databases, active underground tank sites were also identified by EDR. The locations of active tanks are also included on Figure 3 of the ISA. The only National Priorities List (NPL) site in the study area is the HPS.

Table 2.2.4-1. Reported Hazardous Material Releases				
Location Number (Figure 3 of the ISA)	Site Name	Address	Regulatory Database	Site Status (Open/Closed)
Northern Roadways				
1	Shell Service Station #8806	2890 3rd Str	FINDS, HIST CORTES, CA-FID, HIST UST, HAZNET, SWEEPS	Closed
2	MUNI Maint Facility	1399 Marin St	RCRA-SQG, CHMIRS, AST, FINDS, HAZNET	Closed ¹
3	Grenier Wholesale Liquor	1500 Tennessee St	HIST CORTESE, LUST, HAZNET	Closed
4	Hermann Associations	1405 Indiana St	HIST CORTESE, LUST	Closed
5	California Beverage	2550 Cesar Chavez St	CA-FID UST, HAZNET, LUST	Closed

⁵ One site, No. 35 in Table 2.2.4-1, was not on a regulatory agency databases, but was identified by BASELINE from review of regulatory agency files

Table 2.2.4-1. Reported Hazardous Material Releases

Location Number (Figure 3 of the ISA)	Site Name	Address	Regulatory Database	Site Status (Open/ Closed)
6	CCSF Corporate Yard	2323 Cesar Chavez St	UST, HIST UST, LUST, RCRIS-SQG, FINDS	Closed
7	Federated Fry Metals	1901 Cesar Chavez St	RCRIS-SQG, FINDS, CERC-NFRAP, LUST, CAL-SITES, CA-SLIC, Cortese, CA-FID UST, HIST UST	Closed ¹
8	O'Neill, Inc.	2090 Evans Ave	FINDS, HAZNET, HIST CORTESE, EMI, LUST	Closed
9	B.R. Funsten and Co.	2045 Evans Ave	CA-FID UST, HAZNET, FINDS, HIST CORTESE, LUST	Closed
10	Parisian Bakeries	1995 Evans Ave	HIST UST, HAZNET, LUST, HIST CORTESE, CA WDS	Closed
11	Green Glen Linen	1975 Galvez Ave	HAZNET, LUST, HIST CORTESE	Closed
12	Circosta Iron and Metal	1801 Evans Ave	RCRIS-SQG, FINDS, HAZNET, LUST, HIST CORTESE, SWRCY	Closed
13	Xtra Oil	3750 Third St	LUST, UST	Closed
14	Wong Property	1590 Indiana St	HAZNET, HIST CORTESE, LUST	Closed
15	CCSF Muni Granex	1301 Cesar Chavez St	RCRIS SQG, FINDS, HIST CORTESE, HAZNET, HIST UST, LUST	Closed
16	Warehouse	1601 Indiana St	HIST CORTESE, LUST	Closed
17	Habenicht & Howlett	888 Marin St	CA-FID UST, LUST, HIST CORTESE, HIST UST	Closed
18	SFFD Station #25	3305 Third St	LUST, HIST CORTESE, HIST UST, CA-FID UST, HAZNET CHMIRS	Closed
19	U.S. Postal Service	1300 Evans Ave	HAZNET, HIST UST, CERCLIS, RCRIS-SQG, FINDS, LUST, CA-FID UST, CHMIRS, HIST CORTESE	Open – SFDPW has requested further investigation so no remedial plan has been developed yet and closure time is uncertain
20	Blakeway Metal	101 Cargo Way	HAZNET, HIST CORTESE	Closed
21	Bonelli Enterprises	101 Cargo Way	LUST, CA-FID UST	Closed
22	Marelich Mechanical	200 Jennings St	LUST	Closed

Table 2.2.4-1. Reported Hazardous Material Releases

Location Number (Figure 3 of the ISA)	Site Name	Address	Regulatory Database	Site Status (Open/ Closed)
23	PG&E Hunters Point Power Plant	1000 Evans Ave	CHMIRS, TRIS, LUST, HIST UST, HAZNET, HIST CORTESE, CA WDS, AST, FINDS, RCRIS-LQG, ERNS	Closed
24	Geo. Paizi, Trustee	966 Innes Ave	LUST, HIST CORTESE	Closed
25	Donco Industries	894 Innes Ave	ERNS, CERCLIS, RCRIS-SQG, FINDS, HAZNET, CHMIRS	Closed
26	Mee Corp.	895 Innes Ave	HAZNET, LUST, HIST CORTESE	Closed
27	SF Energy Cogen Plant	Innes Ave between Fitch St and Earl St	VCP	Closed
Southern Roadways				
28	Hunters Point Naval Shipyard	Naval Shipyard Area	ERNS, AWP, HIST CORTESE, NPL	Open – No information is available at this time when closure is expected
29	Commercial	50 Crisp Ave	LUST, HAZNET	Closed
30	Pacific Fan and Blower	1132 Quesada Ave	LUST, CA-FID UST	Closed
31	Arnold and Egan Mfg.	1515 Griffith St	LUST, HIST CORTESE, CA-FID UST	Closed
32	Bay Area Drum	1212 Thomas Ave	HAZNET, CAL-SITES, HIST CORTESE, CA BOND EXP. PLAN, LUST, RCRIS-SQG, FINDS	Closed
33	Bayview Iron Works	1235 Thomas Ave	HAZNET, LUST	Closed
34	Continental Baking	1920 Ingalls St	LUST, CHMIRS, HIST CORTESE, HAZNET	Closed
35	Bayview Plume Study Area	Revere Avenue and Jennings St	NOT LISTED	Open – No remedial action plan has been developed and therefore no information is available at this time when closure may be expected
36	Florence Distribution	1150 Thomas Ave	HAZNET, LUST, HIST CORTESE	Closed
37	1370 Wallace	1370 Wallace Ave	ERNS, CHMIRS	Closed
38	Molinari Salami	1401 Yosemite Ave	LUST, HIST CORTESE, HAZNET	Closed
39	E.S. Brush and Sons	1313 Armstrong Ave	LUST, CA-FID UST, HIST UST, HIST CORTESE	Closed
40	Kin Wo Construction	2401 Ingalls St	HAZNET, LUST, HIST CORTESE	Closed

Table 2.2.4-1. Reported Hazardous Material Releases

Location Number (Figure 3 of the ISA)	Site Name	Address	Regulatory Database	Site Status (Open/ Closed)
41	Masterpiece Artist Canvas	1415 Bancroft	HIST UST, LUST, CA-FID UST, HIST CORTESE	Closed
42	Scannell Property	2501 Ingalls St	HIST UST, HAZNET, LUST, HIST CORTESE	Closed
43	Robb Murray Co.	2655 Ingalls St	HIST CORTESE, LUST, FINDS, EMI	Closed
44	Alta Roofing	1414 Donner Ave	LUST, CA-FID LUST, HIST CORTESE, HIST UST	Closed
45	CCSF - 3-Com Park	1 Candlestick Park	LUST, HIST CORTESE	Closed

Source: BASELINE Environmental Consulting 2011.

Notes: Only those sites within 250 feet of the BTI Project road alignments with a reported release of hazardous materials are listed on this table.

Site locations are shown on Figure 3 of the ISA.

Complete environmental database report is included as Appendix B of the ISA.

AWP = State list of hazardous material release sites (formerly Cal-Sites)

CA BOND EXP = California hazardous material release sites proposed for cleanup under the Annual Work Plan (State Superfund) using State bond funds

CA-FID = California Facility Inventory Database of UST sites

CA-SLIC = California list of Spills, Leaks, Investigations, and Cleanups (groundwater contamination cases)

CA-WDS = State list of sites subject to wastewater waste discharge requirements

CAL-SITES = California EPA list of known and suspected hazardous material release sites

CERCLIS = USEPA list of hazardous material release sites

CERC-NFRAP = USEPA CERCLIS hazardous material release sites with No Further Action Proposed

CHMIRS = State database of hazardous material spills/incidents

HIST CORTESE = California list of hazardous material release sites

EMI = State list of regulated air toxic emission sites

ERNS = USEPA list of hazardous material spills/incidents

FINDS = USEPA Facility Index System of hazardous material storage and disposal sites

HAZNET = State list of hazardous waste generators, based on manifest data

HIST UST = State database of sites with a registered UST in 1990

LUST = State and local leaking underground storage tank sites

RCRIS-SQG = USEPA registered small-quantity hazardous waste generator

SWF/LF = State list of solid waste/landfill facilities

UST = State and local lists of current sites with USTs

VCP = State database of hazardous material release sites participating in Voluntary Cleanup Program

¹ Land use restrictions apply to this site.

Previous Environmental Investigations

Over 100 environmental investigations have been conducted in and around the BTI road alignments. Review of the investigation reports found that 54 of the reports contained chemical data of soil and/or groundwater within 100 feet of the BTI road alignments.

The chemical data pertaining to groundwater quality and soil quality to a depth of 10 feet below ground surface (bgs) were reviewed to determine if the maximum concentration of any analyte exceeded the screening level, and thus would identify the site as a potential

contaminant source site. The Regional Water Board Environmental Screening Levels (ESLs) for commercial and industrial land uses for shallow soils not underlain by a potential drinking water source were conservatively used as a screening tool to identify sites with contamination (Regional Water Board 2005, Table B).⁶

The ISA shows sites where soil sampling has reported soil quality to exceed ESLs and sites where the chemical data indicate that the soil would constitute a California hazardous waste, if excavated, based on the definition of hazardous waste in California Code of Regulations (CCR), Title 22, Section 66261. The hazardous waste determination is based on total metal concentrations, except for Site 25 (Bay Area Drum), where organic compounds were also above the California hazardous waste criteria. The ISA also shows sites where it is possible that soil, once excavated, could constitute a California hazardous waste based on soluble metals concentrations. That determination was made based on the theoretical maximum soluble concentration of total concentrations (since few investigations included analyses for soluble concentrations). Those sites where the total concentration exceeded ten times the soluble threshold limit concentration in CCR Title 22 were considered as potentially containing hazardous waste concentrations of contaminants.

A summary of maximum concentrations of contaminants of concern identified in soils and groundwater at each investigation site is provided in the ISA. It should be noted that some of the sites may have been remediated and these contaminants may or may not still be present.

2.2.4.3 ENVIRONMENTAL CONSEQUENCES

This section presents the conclusions of the site history research and review of data obtained from subsurface investigations along the BTI Project area.

Northern Roadways

HISTORIC AND CURRENT LAND USES

Most of this portion of the BTI Project is located along the historic Bay margin of 1851 within the boundaries of the Article 22A jurisdiction, as defined in the San Francisco Health Code. Filling of the area occurred since that time with the majority of filling occurring following the 1906 earthquake and fire. The fill is heterogeneous with construction debris and other wastes (including boulders of serpentinite) and may contain asbestos-containing material and lead-based paint debris. The historic land uses in the late 1800s and early 1900s were primarily related to slaughter houses, including tallow works, tanneries, fertilizer plants, glue works, and livestock packing plants. Some of these industries were later replaced with boat building and maintenance uses, lumberyards, wrecking yards, vehicle accessories (battery manufacturing, fuel storage, and machine shops), and the Hunters Point Power Plant at Jennings Street and Evans Avenue.

In addition, major fuel storage facilities were operated at Illinois and Cesar Chavez streets. These historic land uses could have resulted in releases of hazardous

⁶ Note that exceedance of ESLs does not mean that the soil is hazardous waste or that the groundwater cannot be discharged to the San Francisco's combined storm and sanitary sewer system, although pre-treatment may be required.

substances, including metals, petroleum hydrocarbons, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs, and asbestos. Current land uses along Cesar Chavez Street east of Evans Avenue include many industrial facilities that may handle and store hazardous substances. At least 30 active (operating) underground fuel storage tanks are located along the Northern Roadways.

The historic land uses and fill have resulted in the soil and groundwater quality being affected by metals, petroleum hydrocarbons, VOCs, SVOCs, PCBs, and asbestos. Naturally-occurring asbestos is known to exist near the intersection of Cesar Chavez Street from Evans Avenue to US 101 and along Hunters Point Boulevard. Potential current sources of contamination to soil and groundwater include auto repair and maintenance shops near the I-280 overpass. In addition, there may be ADL issues associated with shallow soil adjacent to US 101 in areas not covered by asphalt.

SOIL AND GROUNDWATER DATA

Hundreds of soil and groundwater samples have been collected along the Northern Roadways and analyzed for metals and organic compounds. The investigations have been conducted as part of site investigations for property transfers, regulatory agency requirements, or for public works projects.

The analytical results indicate that the artificial fill contains metals (primarily lead, but in some cases also nickel, copper, zinc, and antimony) above hazardous waste thresholds for total metal concentrations and may contain hazardous concentrations of soluble metals.

Petroleum hydrocarbons were identified near Rankin Street and Evans Avenue at concentrations suggesting free product in the soil column. High concentrations of petroleum hydrocarbons were also identified in the soil and groundwater near Cesar Chavez Street and Illinois Street, suggesting free petroleum hydrocarbon product.

Portions of the BTI Project alignment would be in proximity to, but would not encroach upon, radiologically-impacted site IR-18 in HPS Parcel B.⁷ Groundwater has not been found to be radiologically-impacted, but the groundwater will be monitored for radionuclides of concern as part of the selected remedy for radiologically-impacted soil and structures at Parcel B. Because the BTI Project alignment would not encroach upon site IR-18, the potential for encountering radiological contamination in soil is not high.

COMPARISON TO COMMERCIAL/INDUSTRIAL ESLS

The subsurface data collected along or adjacent to the Northern Roadways indicate that the chemical quality of soil and groundwater exceed ESLs for commercial/industrial land uses for the protection of human health and groundwater resources. The exceedances are for metals, petroleum hydrocarbons (and related compounds, including polycyclic aromatic hydrocarbons). The analytical results indicate that the artificial fill contains metals (primarily lead, but in some cases also nickel, copper, zinc, and antimony) above hazardous waste thresholds for total metal concentrations and may contain hazardous concentrations of soluble metals.

⁷ Refer to Figure 5 of the ISA.

Southern Roadways

HISTORIC AND CURRENT LAND USES

Portions of the BTI Project are located on formerly submerged lands (based on the 1851 shoreline) west of Hunters Point Expressway. The formerly submerged area is within the City's Article 22A jurisdiction. The formerly submerged areas have been successively filled until about the middle of the last century. Early filling occurred in the early 1900s around the Yosemite Slough area with unknown fill quality and may contain debris from the 1906 earthquake including asbestos-containing material and lead-based paint debris. Filling around the western portion of the BTI Project near and around Candlestick Point occurred around the 1950s with fill that included material from the surrounding hills.

A chemical manufacturing facility was formerly located along Ingalls Street. Current land uses include parcels with debris, auto shops, and junkyards southeast of Ingalls Street; near Arelious Walker Drive and Carroll Avenue there are parcels with construction debris. The southern end of the BTI Project terminates near US 101; ADL issues may be applicable in unpaved areas along the freeway. About thirteen active underground storage tanks (USTs) are operating along the Southern Roadways.

The historic and current land uses between Palou and Gillman avenues are likely to have used or stored hazardous materials that have the potential to have affected the underlying soil and groundwater. In addition, artificial fill placed to fill in the shoreline is of unknown quality and may contain hazardous substances. The substances of concern include petroleum hydrocarbon, metals, VOCs, SVOCs, radioactive materials, and methane gases.

SOIL AND GROUNDWATER DATA

Soil samples have been collected along or near Crisp Avenue, Arelious Walker Drive, Ingalls Street, and Carroll Avenue. Along Arelious Walker Drive, the data indicate that excavated soil would constitute a hazardous waste primarily due to total metals concentrations. Near Hunters Point Naval Shipyard (Crisp Avenue and Arelious Walker Drive), the soils may contain radiological materials and methane. Along Ingalls Street and Carroll Avenue the collected soils data indicate that the soil may potentially constitute a hazardous waste due to soluble metals concentrations. All the data on soil quality north of Carroll Avenue indicate that the soil would also be expected to exceed the commercial and industrial ESLs.

Groundwater data from near Carroll Avenue indicate that the commercial and industrial ESLs have been exceeded. The elevated constituents are metals and petroleum hydrocarbons and related compounds.

COMPARISON TO COMMERCIAL/INDUSTRIAL ESLS

The subsurface data collected along or adjacent to this route south of Carroll Avenue indicate that the chemical quality of soil and groundwater may not exceed ESLs for commercial/industrial land uses for the protection of human health and groundwater resources.

Crisp Avenue from Griffith Street to Spear Avenue would be within Parcel UC-3.⁸ The Navy has completed the removal of radiologically-impacted sanitary sewer and storm drain lines along Crisp Avenue; therefore, project excavation would not be expected to encounter radiological chemicals of concern in the sewers or surrounding soils.

The portion of the BTI Project along Arelious Walker Drive would be adjacent to radiologically-impacted HPS Parcel E-2,⁹ which contains an industrial landfill. Radionuclides of concern are cobalt-60, cesium-137, radium-226, and strontium-90. The Navy has completed removal actions for radiological materials within some areas of Parcel E-2 under time-critical removal actions (TCRAs); however, evaluation of remedial alternatives for areas not addressed under TCRAs is still in progress. The Navy is working on the Final Remedial Investigation and Feasibility Study for Parcel E-2. The remedial alternatives include excavation of waste, containment of waste, and implementation of ICs for soil contamination not removed as part of the TCRAs.

Soil and groundwater quality south of Carroll Avenue may not exceed commercial and industrial ESLs, developed by the Regional Water Board.

Secondary Access Routes

HISTORIC AND CURRENT LAND USES

The Secondary Access Routes consist of Palou, Gilman, Ingerson, and Jamestown avenues. Except for the southeastern portion of Gilman Avenue, these roadways all lie landward of the 1851 shoreline. Sanborn Fire Insurance maps indicate the land use along these roadways was historically residential. An auto service shop was located at the corner of Gilman Avenue and Third Street in the 1950s and 1960s. This site was not listed on any of the regulatory data bases searched.

SOIL AND GROUNDWATER DATA

There were no inactive or active hazardous material release sites along the secondary roads. Therefore, no soil or groundwater analytical data were available. It is considered unlikely that the soil would be hazardous waste or that the groundwater is severely affected by contaminants.

COMPARISON TO COMMERCIAL/INDUSTRIAL ESLS

Since there are no inactive or active hazardous material release sites along the secondary roads, it is considered likely that the soil and groundwater along these roadways would not exceed commercial/industrial ESLs.

Hunters Point Shipyard Transit Center

HISTORIC AND CURRENT LAND USES

Land uses around the proposed HPS Transit Center location include a variety of industrial uses and well as storage of hazardous materials and petroleum products. Investigation has indicated VOC, SVOC, metals, PCBs impacts to the soil. Areas adjacent to the proposed BTI Project roadways have been found to contain radiological materials and methane gas in the subsurface.

⁸ Refer to Figure 5 of the ISA.

⁹ Ibid.

SOIL AND GROUNDWATER DATA

Investigation has indicated VOC, SVOC, metals, and PCBs effects on the soil. Areas adjacent to the proposed BTI Project roadways have been found to contain radiological materials and methane gas in the subsurface. It is expected that the Navy has removed the radiological contamination from within the BTI Project roadways. Approved remedial solutions for the soil and groundwater contamination include leaving non-radiological contamination in place and mitigating human exposure through ICs. Serpentine bedrock-derived fill material, which consists of minerals that naturally contain asbestos and relatively high concentrations of arsenic, manganese, nickel, and other metals, may also result in excess soil being classified as hazardous waste. Groundwater effects have also been documented, primarily from VOCs, but also from hexavalent chromium and PCBs, which may cause groundwater dewatered during utility installations to require special management.

COMPARISON TO COMMERCIAL/INDUSTRIAL ESLS

The subsurface data collected along or adjacent to the proposed roadways for the HPS Transit Center indicate that the chemical quality of soil and groundwater exceeds ESLs for commercial/industrial land uses for the protection of human health and groundwater resources. The exceedances are for metals, petroleum hydrocarbons, VOCs, SVOCs, and PCBs. Since the approved remedial solutions for the soil and groundwater contamination include leaving non-radiological contamination in place and mitigating human exposure through ICs, it is expected that the soil will contain contaminants in excess of ESLs.

Soil and Groundwater Management Costs

Based on excavations quantities provided by the San Francisco Department of Public Works, BASELINE estimated the amount of soil that could potentially be reused, and the amounts that would potentially be classified as hazardous or non-hazardous waste and the associated transport and disposal costs.

BASELINE has preliminarily estimated that 90,552 cubic yards of soil could be reused, 27,113 cubic yards would be expected to exceed the ESLs and therefore be non-hazardous waste, and 9,736 cubic yards of soil could be hazardous waste. The cost to transport and dispose of the soil classified as non-hazardous waste is estimated to be \$1,935,852. The cost to transport and dispose of the soil classified as hazardous waste is estimated to be \$1,406,914.

Further sampling in the areas proposed for excavation will provide a more precise estimate of the soil volumes that would be hazardous or non-hazardous waste.

Disposal of groundwater may be required if dewatering operations are performed during construction. This is only expected to occur where deeper excavations are necessary, such as during the installation of utilities. Areas where dewatering is expected (i.e., large soil volumes and therefore deep excavations) would be mostly within HPS and areas in and around the Candlestick Point area. The data indicate that groundwater within HPS may be affected with organic and inorganic contaminants. Based on the available data, encountering contaminated groundwater is less likely around Candlestick Point. The increase in cost for handling groundwater containing contaminants would include treatment, such as carbon filters, possibly transport to an offsite treatment facility, and sampling and analysis of groundwater samples. Since the cost for disposal of

groundwater from dewatering would depend on the volume of groundwater, it is too speculative at this time to estimate the cost.

2.2.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Preliminary Site Investigation/Phase II

The BTI Project area is largely underlain by historic and differential fill which means any contamination may be sporadically located. Because of these site conditions, a Phase II investigation at this stage of design would not substantially contribute to accurate and representative subsurface information to inform the final project design and any consequential avoidance, minimization and/or mitigation measures. For this reason, and because of the length of the Project timescale (see Figure 1-3), a Preliminary Site Investigation/Phase II investigation shall be performed during the final design phase of the Project development. The investigation shall be implemented after a Sampling and Analyses Plan has been approved by the San Francisco Department of Public Health (SFDPH) and the Department. The purpose of the investigation would be to characterize and classify soil that would be excavated as part of BTI Project implementation and to determine groundwater quality in areas where excavations would intercept the shallow groundwater table. Following the investigation, appropriate avoidance, minimization and/or mitigation measures will be developed to ensure that exposure to hazardous waste will not occur.

2.2.5 AIR QUALITY

The proposed BTI Project is located in designated nonattainment/maintenance areas for transportation-related criteria air pollutants. The BTI Project must comply with requirements for carbon monoxide (CO) and/or fine particulate matter conformity analyses under the Federal Transportation Conformity Rule (2012). This section provides the details and results of the conformity analyses and also discusses potential construction effects, naturally occurring asbestos and mobile source air toxics (MSAT).

2.2.5.1 REGULATORY SETTING

The BTI Project is located in the City and County of San Francisco and within the San Francisco Bay Area Air Basin (SFBAAB). Air quality within the Bay Area is maintained and improved through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of other programs.

The federal Clean Air Act (CAA) as amended in 1990 is the federal law that governs air quality. The California Clean Air Act of 1988 is its companion state law. These laws, and related regulations by USEPA and California Air Resources Board (ARB), set standards for the quantity of pollutants (i.e., concentrations) that can be in the air while protecting public health and welfare. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related "criteria" pollutants that have been linked to potential health concerns. The criteria pollutants are: CO, nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM, broken down for regulatory purposes into particles of 10 microns or smaller (PM₁₀), and particles of 2.5 microns and smaller (PM_{2.5})), lead (Pb), and sulfur dioxide (SO₂). In addition, there are state standards for visibility-reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride. The NAAQS and state standards (Table 2.2.5-1) are set at levels intended to protect public health with a margin of safety, and they are subject to periodic review and revision. Both state and federal regulatory programs also cover MSAT; some criteria pollutants are also defined as MSAT.

Federal air quality standards and regulations provide the basic structure for project-level air quality analysis under NEPA. In addition to this type of environmental analysis, a parallel "Conformity" requirement under the CAA also applies.

FCAA Section 176(c) prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs, or projects that are not found to conform to State Implementation Plan (SIP) for achieving the goals of CAA requirements related to the NAAQS. "Transportation Conformity" takes place on two levels, first, at the regional level and second, at the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and "maintenance" (i.e., former nonattainment) areas for the NAAQS, and pertain only for the specific NAAQS that are or were violated. USEPA regulations at 40 CFR 93 govern the conformity process.

Table 2.2.5-1. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Ozone (O ₃) ^a	1 hour 8 hours	0.09 ppm 0.070 ppm	0.075 ppm	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO _x) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically-produced ROG may also contribute.
Carbon Monoxide (CO)	1 hour 8 hours	20 ppm 9.0 ppm ^c	35 ppm 9 ppm –	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM ₁₀) ^a	24 hours Annual	50 µg/m ³ 20 µg/m ³	150 µg/m ³ –	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM ₁₀ .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine Particulate Matter (PM _{2.5}) ^a	24 hours Annual	– 12 µg/m ³	35 µg/m ³ 15 µg/m ³	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air contaminant – is in the PM _{2.5} size range. Many aerosol and solid compounds are part of PM _{2.5} .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO _x , sulfur oxides (SO _x), ammonia, and ROG.

Table 2.2.5-1. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Nitrogen Dioxide (NO ₂)	1 hour Annual	0.18 ppm 0.030 ppm	0.10 ppm 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO ₂)	1 hour 3 hours 24 hours Annual	0.25 ppm – 0.04 ppm –	0.075 ppm 0.5 ppm 0.14 ppm 0.030 ppm	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
Lead (Pb) ^d	Monthly Quarterly Rolling 3-Month Average	1.5 µg/m ³ –	– 1.5 µg/m ³ 0.15µg/m ³	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like batter production and smelters. Past: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.

Sources: California Air Resources Board Ambient Air Quality Standards chart, 02/16/2010 (<http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>); Sonoma-Marín Area Rail Transit Draft Air Pollutant Standards and Effects table, November 2005, page 3-52; USEPA and California Air Resources Board air toxics websites, 05/17/2006.

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter

^a Annual PM₁₀ NAAQS revoked October 2006; was 50 µg/m³. 24-hr. PM_{2.5} NAAQS tightened October 2006; was 65 µg/m³.

^b Prior to 6/2005, the 1-hour standard was 0.12 ppm.

^c Rounding to an integer value is not allowed for the State 8-hour CO standard. A violation occurs at or above 9.05 ppm.

^d The ARB has identified lead, vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM₁₀ and, in larger proportion, PM_{2.5}. Both ARB and USEPA have identified lead and various organic compounds that are precursors to ozone and PM_{2.5} as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong. Lead NAAQS are not required to be considered in Transportation Conformity analysis.

Regional level conformity in California is concerned with how well the regional transportation system supports plans for attaining the standards set for CO, NO₂, O₃, and particulate matter (PM₁₀ and PM_{2.5}) and in some areas, SO₂. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO₂, and also has a nonattainment area for Pb. However, the FCAA does not currently require analysis for lead in the transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all of the transportation

projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the FTIP. Conformity for these plans is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), FHWA, and Federal Transit Administration (FTA) make determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project-level also requires "hot spot" analysis if an area is "nonattainment" or "maintenance" for CO and/or PM₁₀ and PM_{2.5}. A region is nonattainment if one or more monitoring stations in the region fail to attain the relevant standard and the USEPA officially designates the area nonattainment. Areas that were previously designated nonattainment but subsequently meet the standard may be officially redesignated to attainment by USEPA, and are then called "maintenance" areas. Hot spot analysis is essentially the same, for technical purposes, as CO or PM analyses performed for NEPA purposes. Conformity rules include some specific procedural and documentation standards for projects that involve a hot spot analysis. In general, projects must not cause the hot spot-related standard to be violated, and in nonattainment areas, the project must not cause any increase in the number and severity of violations. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

Table 2.2.5-2 shows that the proposed BTI Project is located in an area that is nonattainment for ozone and PM_{2.5} and maintenance for CO. The area is unclassified for PM₁₀. This analysis focuses on the criteria pollutants CO and PM_{2.5}.

Table 2.2.5-2. Project Area Attainment Status	
Criteria Pollutant	Federal Attainment Status
Ozone (O ₃)	Nonattainment
Carbon Monoxide (CO)	Maintenance
Fine Particulate Matter (PM _{2.5})	Nonattainment

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) has local air quality jurisdiction over the BTI Project vicinity. The BAAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

The BTI Project may be subject to the following BAAQMD Rules and Regulations:

- Reg 8, Rule 15: Emulsified and Liquid Asphalts
- Reg 9, Rule 8: Nitrogen Oxides And Carbon Monoxide from Stationary Internal Combustion Engines
- Reg 11, Rule 2: Asbestos Demolition, Renovation and Manufacturing

- Reg 11, Rule 14: Asbestos-Containing Serpentine
- Reg 12, Rule 3: Asphalt Air Blowing

2.2.5.2 AFFECTED ENVIRONMENT

The affected environment, environmental consequences, and avoidance, minimization, and mitigation measures for the BTI Project are presented in detail in the supporting technical document *Bayview Transportation Improvements Project Draft Air Quality Analysis*, November 2011, by ENVIRON International Corp. The following subsections provide a detailed summary of the findings from the technical report.

Air quality is influenced by climatological conditions, topography, and the quantity and type of pollutants released in an area. The major determinants of transport and dilution of a given pollutant are wind speed and direction, atmospheric stability, and terrain; sunshine can also affect the creation and resulting concentrations of photochemical pollutants such as ozone.

Climate and Meteorology

The regional climate in the SFBAAB is considered semi-arid. This climate is characterized by mild, dry summers and mild, moderately wet winters (about 90% of the annual total rainfall is received in the November–April period), moderate daytime onshore breezes, and moderate humidity. The climate is dominated by a strong, semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the moderating effects of the adjacent oceanic heat reservoir. In summer, when the high-pressure cell is strongest and farthest north, fog forms in the morning, and temperatures are mild. In winter, when the high-pressure cell is weakest and farthest south, occasional rainstorms occur.

The BTI Project is located in the San Francisco Peninsula (Peninsula) climatological subregion that extends northwest from San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the Peninsula, creating an area of warmer temperatures and fewer foggy days to the east where the ridgeline blocks the marine layer. In San Francisco, the mean maximum summer temperatures are in the mid-60s degrees Fahrenheit, while mean minimum temperatures during the winter months are in the high-30s to low-40s degrees Fahrenheit. Annual average wind speeds range from 4 to 9 knots throughout the Peninsula, with prevailing winds from the west, although local wind patterns are often influenced greatly by local topographic features.

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. This channeling of the flow through the Golden Gate produces a "jet" that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Golden Gate or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3:00 p.m. to 4:00 p.m. in July is about 17 knots, compared with only about 9 knots at San Jose and less than 6 knots at the Farallon Islands.

The sea breeze between the coast and the Central Valley commences near the surface along the coast in late morning or early afternoon; it may be first observed only through the Golden Gate. Later in the day the wind layer deepens and intensifies while spreading inland as the breeze intensifies and deepens it flows over the lower hills farther south along the Peninsula. This process frequently can be observed as a bank of stratus clouds "rolling over" the coastal hills on the west side of the Bay. The depth of the sea breeze depends in large part upon the height and strength of the atmospheric inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. As a result, it is unusual for the summer sea breeze to flow over terrain exceeding 2,000 feet in elevation.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon and otherwise light and variable winds.

Onshore winds from the west dominate near the BTI Project vicinity such that any emissions resulting from the BTI Project that are not of local concern would be blown eastward over the San Francisco Bay.

Existing Air Quality

The BAAQMD operates several air quality monitoring stations throughout the Bay Area. The monitoring station closest to the BTI Project vicinity is the San Francisco–Arkansas Street monitoring station located approximately 3 miles to the north of the BTI Project area on Potrero Hill. Table 2.2.5-3 shows recent data collected at this monitoring station (i.e., 2007 through 2009). During this period at this station, the state and federal ozone, CO and NO₂ standards were not exceeded. The state 24-hour PM₁₀ standard was exceeded twice, while the federal 24-hour PM₁₀ standard was not exceeded. For this time period, the annual average also exceeded the 20 microgram per cubic meter (µg/m³) state standard. The federal 24-hour standard for PM_{2.5} standard was exceeded six times over this period at this station; however, the annual average was below both the state 12 µg/m³ and federal 15 µg/m³ standards.

Table 2.2.5-3. Summary of Monitoring Data, San Francisco-Arkansas St., 2007–2009

Air Pollutant	2007	2008	2009
Ozone			
Maximum 1-hour concentration measured	0.060 ppm	0.082 ppm	0.072 ppm
Days exceeding state 0.09 ppm 1-hour standard	0	0	0
Maximum 8-hour concentration measured	0.049 ppm	0.066 ppm	0.056 ppm
Days exceeding state 0.07 or federal 0.075 ppm 8-hour standard	0	0	0
Respirable Particulate Matter (PM₁₀)			
Annual average concentration measured	21.9 µg/m ³	22.0 µg/m ³	18.7 µg/m ³
Maximum 24-hour concentration measured	69.8 µg/m ³	41.3 µg/m ³	36.0 µg/m ³
Days exceeding federal 150 µg/m ³ 24-hour standard	0	0	0
Days exceeding state 50 µg/m ³ 24-hour standard	2	0	0
Fine Particulate Matter (PM_{2.5})			
Annual average concentration measured	8.7 µg/m ³	9.8 µg/m ³	9.7 µg/m ³
Maximum 24-hour concentration measured	45.2 µg/m ³	29.4 µg/m ³	35.6 µg/m ³
No. of days exceeding federal 35 µg/m ³ 24-hour standard	5	0	1

Table 2.2.5-3. Summary of Monitoring Data, San Francisco-Arkansas St., 2007–2009

Air Pollutant	2007	2008	2009
Carbon Monoxide (CO)			
Maximum 8-hour concentration measured	1.60 ppm	2.3 ppm	2.9 ppm
Number of days exceeding federal and state 9 ppm 8-hour standard	0	0	0
Nitrogen Dioxide (NO₂)			
Annual average concentration measured	0.016 ppm	0.016 ppm	0.0156 ppm
Maximum 1-hour concentration measured	0.069 ppm	0.062 ppm	0.059 ppm
Days exceeding state 0.10 ppm 1-hour standard	0	0	0
<i>Source</i> ; BAAQMD annual air quality summaries 2007-2009 at http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx Accessed July 2011 ppm = parts per million of air; µg/m ³ = microgram per cubic meter			

2.2.5.3 ENVIRONMENTAL CONSEQUENCES

Regional Air Quality Conformity

To satisfy regional project-level conformity, the proposed project must be listed in a conforming RTP and TIP. The proposed BTI Project was included in the regional emissions analysis conducted by the MTC for the conforming Transportation 2035 Plan (Regional Transportation Plan—RTP, with Administrative Modifications finalized October 27, 2010) as Reference Number 21549 (MTC 2011). The project's design concept and scope have not changed substantially from what was analyzed in the RTP to implement direct access route from HPS to US 101 including paving and other improvements. The conformity analysis for the RTP found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality effects consistent with those identified in the SIPs for achieving the NAAQS. FHWA determined the RTP conforms to the SIP on May 29, 2009.

The BTI Project is also included in the financially constrained 2011 Transportation Improvement Program (TIP), completed by the MTC as TIP ID SF-010038, as revised in 2011. The project's design concept and scope have not changed significantly from what was analyzed in the TIP and the year the project is expected to open to traffic is consistent with the project's TIP listing. The federal TIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds for their implementation. FHWA determined the TIP to conform to the SIP on December 14, 2010. Documentation related to the regional emissions analyses, and public and interagency consultation processes conducted to develop the RTP and TIP is provided in the Draft Air Quality Analysis, Appendix B, and pages from the RTP and TIP listing the project, as well as FHWA's concurrence letters, are found in the Draft Air Quality Analysis, Appendix A.

Project Level Conformity

The Transportation Conformity Rule is intended to prevent a proposed project or action from causing new air quality problems due to potential violations of an ambient air quality standard or the exacerbation of any existing problem by extending the time it takes to attain the standard. In this instance, assessing transportation conformity meant considering project-related traffic emissions of the following pollutants.

- 8-hour CO NAAQS (Maintenance designation)
- 24-hour PM_{2.5} NAAQS (Nonattainment designation)

CARBON MONOXIDE HOT-SPOT ANALYSIS

The California Project-Level Carbon Monoxide Protocol (CO Protocol) was used to analyze potential CO effects from the BTI Project. The hot-spot analysis considered the most congested intersections affected by the project in the project opening (2106) and RTP horizon (2035) years. The Transportation Analysis by Fehr and Peers (2012) provided the basis for selecting the worst-case intersection for quantitative modeling analysis using the CO Protocol. This approach assumes that if model-calculated concentrations near the most congested intersection affected by a project are less than the ambient standards, then other less congested intersections would have the same or less potential for air quality problems, so the project would comply with the intent of the transportation air quality conformity rule.

Traffic volumes and operating conditions used in the modeling were obtained from the traffic analysis data prepared for this project by Fehr and Peers (2012). Because the PM peak period generally represents the worst case traffic condition, CO modeling was conducted using PM peak-hour traffic volumes and intersection data. Based on the traffic analysis data, intersections would not be affected by the BTI Project in the opening year (2016). In 2035, three intersections, Evans/Napoleon/Toland, Crisp/Palou, and Third Street/Evans Avenue, would operate at LOS F under with-project conditions and average delays increase by 59, 47, and 34 seconds, respectively. Because intersection volumes are much higher at the Third Street/Evans Avenue intersection compared to the remaining two affected intersections, this intersection would likely have the greatest potential for changes in CO levels, and the Third Street/Evans Avenue intersection was selected to represent the worst-case modeling scenario.

The ambient air quality effects of project-related traffic emissions were evaluated using the CALINE4 dispersion model (Caltrans 1997) for the Existing (2011), open to the public year (2016) with and without project, and horizon year (2035) with and without project using the assumptions consistent with those used in the regional emissions analysis. Vehicle emission rates were determined using the California Air Resources Board Emission FACtors (EMFAC) 2007 emission rate program using the default fleet mix and Inspection and Maintenance model parameters for San Francisco County, and temperature and humidity data assumed in the CT-EMFAC model for winter conditions. Average cruise speed of 15 miles per hour (mph) was used for departure segments and 3 mph used for approach segments. The use of 3 mph link speed is the most conservative assumption for approach travel speeds.

CO concentrations were estimated at 12 modeling receptor locations near the Third Street and Evans Avenue intersection and were chosen based on the Department CO protocol. Figure 2.2.5-1 shows the study intersection vicinity and the inset in this figure depicts the modeling receptor locations used for the analysis. Receptor heights were set at 6 feet (1.8 meters) and a distance of 10 feet (3 meters) from the edge of roadway at each of the four corners and an additional 10 feet extending along each segment.

Meteorological inputs for the CALINE4 modeling were those recommended in the CO protocol (Caltrans 1997) and included in the EMFAC model. The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind

angles option was used to determine a worst-case concentration for each receptor. The meteorological inputs included the following.

- 0.5 meters per second (m/s) wind speed
- G stability class ground-level temperature inversion
- 10 degree wind direction standard deviation
- 1000 meters mixing height

Modeling Results

Modeling results are presented in Table 2.2.5-4. Maximum-predicted concentrations are the same with or without the project in both the opening and 2035 horizon years. Although traffic volumes increase in future years, modeled concentrations remain about the same for existing, opening and horizon years. In this instance, increases in emissions due to higher traffic volumes are likely offset by requirements for cleaner fuels and lower-emitting vehicles.

The maximum-modeled CO concentrations near the Third Street/Evans Avenue intersection are well below the 1-hour and 8-hour NAAQS under worst case modeling assumptions. Because CO concentrations near the most affected intersection in the project vicinity meet the ambient air quality standards, other less affected intersections would also be less than the standards, and the BTI Project would comply with the intent of the transportation air quality conformity rule.

Table 2.2.5-4. CO Modeling Results (ppm)

Intersection	Maximum Modeled CO concentration - ppm				
	Existing	2016 No Build	2016 Build	2035 No Build	2035 Build
Third St/ Evans Ave 1-hour	5.0	4.9	4.9	5.0	5.0
8-hour	2.8	2.7	2.7	2.8	2.8
Notes: National Ambient Air Quality Standards: 1-hour average: 35 ppm; 8-hour average: 9ppm Future background CO values calculated as the second highest maximum over the last 2 years as measured at the BAAQMD Arkansas Street monitoring station in San Francisco, CA: 1-hour average: 4.3ppm 8-hour average: 2.3 ppm					

PM2.5 HOT-SPOT ANALYSIS

Quantitative PM hot-spot analysis is required under the USEPA Transportation Conformity Rule PM10 and PM2.5 Amendments for Projects of Air Quality Concern (POAQC), as described in USEPA's Final Rule of March 2006. Projects that are not POAQC do not require detailed PM hot-spot analysis.

The USEPA Transportation Conformity Guidance (final Rule Amendments), December 2010 (USEPA 2010), says the following types of projects are considered POAQC.



CO HOTSPOT MODELED INTERSECTION AND RECEPTOR LOCATIONS



-  Modeled Intersection
-  Modeled Receptor Location

Figure 2.2.5-1
CO Modeling Network and Receptors

1. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles (significant number is defined as greater than 125,000 Annual Average Daily Traffic (AADT) and 8% or more of such AADT is diesel truck traffic, or in practice 10,000 truck AADT or more regardless of total AADT; significant increase is defined in practice as a 10% increase in heavy duty truck traffic;
2. Projects affecting intersections that are at a Level of Service D, E, F, with a significant number of diesel vehicles, or that will change to Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
3. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
4. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; or
5. Projects in or affecting locations, areas, or categories of sites which are identified in the PM2.5 or PM10 implementation plan or implementation plan submission, as appropriate, as sites of possible violation.

The San Francisco Bay Area is designated as nonattainment for the 24-hour PM2.5 standard and unclassified for PM10. Beginning December 14, 2010, certain projects are required to engage in Interagency Consultation (IAC) and complete PM2.5 hot-spot analysis as part of the project-level conformity determination process. Because the BTI Project would expand bus transfer points and add a new transit center where an increased number of transit vehicles congregate at a single location, the project entered the consultation process to determine whether it was a POAQC.

On June 23, 2011, the MTC Air Quality Conformity Task Force (AQCTF) issued a preliminary concurrence that the BTI Project is not a POAQC based on the initial IAC submittal. The initial submittal suggested that the BTI Project should not be considered a project of air quality concern for PM2.5 because it does not meet the definition of a POAQC in USEPA's Transportation Conformity Guidance. When it issued a determination of preliminary concurrency with this finding, the AQCTF requested additional documentation to aid in their formal determination. SFDPW responded to this request on July 25, 2011. The AQCTF concurred on August 31, 2011 that the project is not a POAQC.¹⁰ Based on that determination, the BTI Project is not likely to affect PM2.5 concentrations in the vicinity and would comply with the intent of the transportation air quality conformity rule.

Although the BTI Project may result in the increase of diesel buses and trucks, it was found to not be a POAQC for the following reasons. Firstly, the transit fleet that would serve the project vicinity is comprised of electric trolleys, diesel electric buses and other bio-diesel fueled buses. Particulate emissions from the diesel fleet have been reduced beyond the state mandated reduction level of 85% for urban buses, with potential further reductions in the future. Further, the diesel fleet is anticipated to be replaced by zero emissions vehicles by the time that the BTI Project is completed, so any buses that would congregate in one location would result in minimal emissions. This assumption is based on Muni's Clean Air Plan "Zero Emissions 2020" which sets the course for fleet conversion to hybrid and zero emission technologies, together with a procurement

¹⁰ See the Draft Air Quality Analysis and Webpage - <http://fms.mtc.ca.gov/fms/home.do> for more information

schedule set out in the SFMTA 5-year Capital Improvement Plan (refer to Capital Investment Plan reference numbers REF 264, CPT 554, and REF 184). The July 25, 2011 memorandum with the additional information presented to the AQCTF (which includes the transition of fleet turnover and an explanation of the emissions associated with hybrid buses) together with Muni's Clean Air Plan and the Capital Investment Plan are all presented in Appendix E of the Air Quality Analysis.

The EPA's Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment Maintenance Areas indicates that projects that are found not to be a POAQC meet the requirements of the CAA and 40 CFR 93.116 without a hot-spot analysis and are not anticipated to cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area. Because the BTI Project was found to not be a POAQC by the AQCTF, no hot-spot analysis is required to meet the requirements of the CAA, and the project is not anticipated to exceed the PM_{2.5} or PM₁₀ NAAQS.

Construction-related Impacts and Hot-Spot Analysis

Although construction of the BTI Project would be phased over many years (i.e., 2015–2032), no construction activities are expected to occur for longer than 5 years in any one location. Consequently, construction-related emissions are not required to be considered in the hot-spot analysis according to Caltrans Standard Environmental Reference (Chapter 11). However, short-term construction may affect air quality as discussed below.

ENVIRONMENTAL CONSEQUENCES RELATED TO CONSTRUCTION

Construction activities for proposed BTI Project improvements may include the following: demolition of existing street and sidewalk; protection, replacement or relocation of existing underground utilities; signage and traffic light installation; asphalt/concrete paving; curb, gutter and ramp installation; striping; bus shelter installation; landscape installation including trees, shrubs and irrigation systems; street lighting installation; and electrical connection installation.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (e.g., airborne dust) generated by excavation, grading, hauling, and various other activities. Exhaust emissions from construction equipment are anticipated and would include CO, nitrogen oxides (NO_x), VOCs, directly-emitted particulate matter (PM₁₀ and PM_{2.5}), and MSATs such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NO_x and VOCs in the presence of sunlight and heat.

Construction-related effects on air quality from most roadway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough fugitive dust and small amounts of CO, SO₂, NO_x, and VOCs to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an additional source of airborne dust after it dries. Particulate emissions would vary from day to day, depending on the nature and magnitude of construction activity and local

weather conditions. Particulate emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

In addition to dust-related particulate emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO₂, NO_x, VOCs and some diesel particulate in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO₂ is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Off-road diesel fuel meeting federal standards can contain 300 parts per million (ppm) or more of sulfur, whereas on-road diesel is restricted to less than 15 ppm of sulfur. However, under California law and ARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 ppm), so SO₂-related issues due to diesel exhaust would likely be minimal.

Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site(s). Such odors would be quickly dispersed below detectable thresholds as distance from the site(s) increases.

Mitigation measures are required by the Department and the SFDPH to minimize dust from construction. These measures are listed in Section 2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures.

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally occurring asbestos (NOA), which ARB identified as a MSAT in 1986, is found in many parts of California and commonly associated with serpentine rock (serpentinite). Exposure to airborne asbestos poses a potential health hazard.

Franciscan serpentinite and mélange (a mixed assemblage of rock types including serpentinite, shale, chert, sandstone, and greenstone) form most of the bedrock underlying the Bayview and Hunter's Point neighborhoods which include some portions of the proposed BTI Project.¹¹ Both rock types are known to contain small amounts of chrysotile asbestos. Serpentinite may underlie portions of the proposed roadways in that project. Mélange occurs throughout the Hunters Point shear zone. Chrysotile is a NOA mineral that can be a human health hazard if it becomes airborne. The other serpentine minerals found in serpentinite do not form fibrous crystals and are not asbestos minerals. Construction activities that include soil disturbance activities will require specific dust control measures and/or an Asbestos Dust Mitigation Plan, depending on the amount of soil disturbed. These measures are discussed in Section 2.2.5.4.

¹¹ The CP-HPS Phase II EIR provides a complete description of NOA locations in the Hunter's Point, Candlestick Point and Bayview vicinities. This document provides the basis for the NOA discussion in this air quality review. <http://www.sf-planning.org/Modules/ShowDocument.aspx?documentid=298>

Asbestos may be released during demolition of existing structures if there is asbestos-containing material (ACM) present in the structure to be demolished. If asbestos is present, the BTI Project would be subject to National Emissions Standards for Hazardous Air Pollutants for Demolition (NESHAP), which would minimize potential impacts related to asbestos.

National Emissions Standards for Hazardous Air Pollutants for Demolition

The CAA requires EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with CAA Section 112, EPA has established National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under this section. On March 31, 1971, EPA identified asbestos as a hazardous pollutant, and on April 6, 1973, first promulgated the asbestos NESHAP in 40 CFR 61. In 1990, a revised NESHAP regulation was promulgated by EPA.

The asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material (ACM). Accordingly, the asbestos NESHAP specifies work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). In addition, the regulations require the owner of the building and/or the contractor to notify applicable state and local agencies and/or EPA regional offices before all demolitions or before renovations of buildings that contain a certain threshold amount of asbestos.

Mobile Source Air Toxics

In addition to the criteria air pollutants like CO and fine particulates discussed above, there are a variety of other potentially hazardous air pollutants for which health-based ambient air quality standards have not been established. Of the 188 hazardous air pollutants listed in the federal Clean Air Act amended in 1990, the USEPA has identified 21 of these substances as MSATs. Actual data related to potential effects of MSATs as well as the mechanisms related to analyzing dispersion of MSATs are incomplete or unavailable, so specific analyses of these substances are not as yet typically performed. However, in 2006, FHWA released guidance for considering MSATs and describing when and how to analyze MSATs during the environmental review process for transportation projects subject to FHWA review. This guidance was subsequently updated by FHWA in "Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA Documents" issued September 30, 2009. FHWA identified three possible levels of analysis as follows: No analysis for projects with no potential for meaningful MSAT effects; Qualitative analysis for projects with low potential MSAT effects; or Quantitative analysis to differentiate among alternatives for projects with higher potential MSAT effects. Projects with low potential MSAT emissions are those that improve the operation of highways or roadways, or freight facilities without adding substantial new capacity. Therefore, according to FHWA MSAT review guidance, the proposed BTI Project would be considered a project with low potential for additional MSAT emissions because the transportation system affected by the BTI Project generally improves (congestion would be reduced due to the project-generated increase in transit mode share, and corresponding decrease in auto mode share). In particular, the Annual Average Daily Traffic (AADT) would be substantially less than 140,000 in 2035 for all streets (refer to

Table 1-2).¹² Although an additional travel lane would be added to Harney Way due to the BTI Project, the total number of vehicles generated by development of the CP-HPS Plan area would be reduced due to the aforementioned shift in mode share (refer to Section 2.1.5. *Traffic and Transportation/Pedestrian and Bicycle Facilities*).

The estimated vehicle miles traveled (VMT) under the future baseline condition in 2035 and with the BTI Project improvements are expected to be nearly the same because the BTI Project does not increase capacity and is intended to reallocate vehicle trips to transit trips. It is expected there would be no appreciable difference in overall MSAT emissions with the project compared to No Build. Also, future MSAT emissions will likely be lower than present levels as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57% to 87% between 2000 and 2020. Local conditions may differ from national projections in terms of fleet mix and turnover, VMT growth, and local control measures, and in California in particular due to efforts to reduce congestion and vehicle emissions. However, the magnitude of USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions are likely to be lower in the future in nearly all cases. A complete discussion of the MSAT effects is included in Appendix D of the Air Quality Analysis.

2.2.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

BTI Project-related air quality effects resulting from operational sources are not expected so no mitigation measures are warranted. However, the Department and the SFDPH require efforts to minimize dust from construction. Efforts to avoid and minimize construction dust using dust control measures are discussed below.

Construction Dust

The proposed BTI Project improvements focus on transit-related operational improvements and less on surface improvements and excavation, although those activities would also occur along some transit routes. Most of the construction effects to air quality would be short-term in duration and, therefore, not expected to result in long-term adverse conditions.

To minimize dust from construction, the SFDPH Code Article 22B, Construction Dust Control, requires, for construction projects within 1,000 feet of sensitive receptors (residence, school, childcare center, hospital or other health-care facility or group-living quarters), preparation of a site-specific dust control plan (DCP). That plan must include a number of measures intended to minimize visible dust. These measures contain all the dust control measures presented in the BAAQMD CEQA Guidelines; however, the San Francisco Health Code requirements increase the watering frequency as well as adding monitoring, recordkeeping, third-party verification, and community outreach requirements not found in the BAAQMD guidelines. Implementation of the SFDPH dust control measures would minimize emissions and potential effects of construction-related effects. The DCP shall be submitted to and approved by the SFDPH prior to the beginning of construction, and the Project Applicant must ensure the implementation of all specified dust control measures throughout the construction project. The DCP shall require compliance with the following specific mitigation measures to the extent deemed necessary by the SFDPH to achieve no visible dust at the property boundary.

¹² Table 1-2 shows future weekday ADT. Typically weekday traffic volumes are higher than weekends; thus ADT are considered to be more conservative than AADT (which would include weekends).

- Submit a map to the San Francisco Director of Health showing all sensitive receptors within 1,000 feet of the site.
- Keep all graded and excavated areas, areas around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 mph.
- Analyze wind direction and placement of upwind and downwind particulate dust monitors.
- Keeps records for particulate monitoring results.
- Enforce requirements for shutdown conditions based on wind, dust migration, or if dust is contained within the property boundary but not controlled after a specified number of minutes.
- Establish a hotline for surrounding community members who may be potentially affected by project-related dust. Contact person shall respond and take corrective action within 48 hours. Post publicly visible signs around the site with the hotline number as well as the phone number of the BAAQMD and make sure the numbers are given to adjacent residents, schools, and businesses.
- Limit the area subject to construction activities at any one time.
- Install dust curtains and windbreaks on windward and downwind sides of the property lines, as necessary. Windbreaks on windward side should have no more than 50% air porosity.
- Limit the amount of soil in trucks hauling soil around the job site to the size of the truck bed and securing with a tarpaulin or ensuring the soil contains adequate moisture to minimize or prevent dust generation during transportation.
- Enforce a 15 mph speed limit for vehicles entering and exiting construction areas.
- Install and use wheel washers to clean truck tires.
- Sweep affected streets with water sweepers at the end of the day.
- Halt all construction activities during periods of sustained strong winds, hourly average wind speeds of 25 mph.
- Apply soil stabilization methods to inactive areas.
- Sweep off adjacent streets to reduce particulate emissions.
- Hire an independent third party to conduct inspections for visible dust and keeping records of those inspections.
- Minimize the amount of excavated material or waste materials stored at the site.
- Prevent visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property.

Implementation of the following measures prescribed by the Department, some of which may also be required for other purposes such as asbestos dust or storm water pollution control, would reduce the potential for air quality effects from construction activities.

- The construction contractor shall comply with the Department's Standard Specifications in Section 14 (2010).
 - Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
 - Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.
- Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the ROW line depending on local regulations.
- Soil binder will be spread on any unpaved roads used for construction purposes, and all project construction parking areas.
- Trucks will be washed off as they leave the ROW as necessary to control fugitive dust emissions.
- Construction equipment and vehicles shall be properly tuned and maintained. Low sulfur fuel shall be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes as needed to minimize construction effects on existing communities. As mentioned, the City of San Francisco Health Code and BAAQMD require the development of a fugitive dust control plan.
- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.
- To the extent feasible, establish environmentally sensitive areas or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited.
- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.
- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality effects caused by idling vehicles along local roads during peak travel times.
- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.
- Implement emission control device installation on construction equipment. To reduce diesel particulate matter (DPM) emissions during project construction, the Project

Applicant shall require construction equipment used for the BTI Project to utilize emission control technology such that 50% of the fleet will meet USEPA Tier 2 standards outfitted with ARB Level 3 VDECS (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first year of the project's construction activities (Year 1), increasing to 75% of the fleet in Year 2 and 100% of the fleet starting in Year 3 and for the duration of the BTI Project.

Asbestos Dust Mitigation Plans

Prior to obtaining a grading, excavation, site, building or other permit from the City that includes soil disturbance activities, the Project Applicant shall obtain approval of an Asbestos Dust Mitigation Plan (ADMP) from BAAQMD for areas over one acre that potentially contain naturally occurring asbestos. Compliance with the ADMP and DCP may be required as a condition of the permit. The ADMP shall be submitted to and approved by the BAAQMD prior to the beginning of construction, and the Project Applicant must ensure the implementation of all specified dust control measures throughout the construction Project. The ADMP shall require compliance with the following specific control measures to the extent deemed necessary by the BAAQMD to meet its standard.

- For construction activities disturbing less than one acre of rock containing naturally occurring asbestos, the following specific dust control measures must be implemented in accordance with the asbestos Airborne Toxic Control Measure (ATCM) before construction begins and each measure must be maintained throughout the duration of the construction project.
 - Limit construction vehicle speed at the work site to 15 mph.
 - Sufficiently wet all ground surfaces prior to disturbance to prevent visible dust emissions from crossing the property line.
 - Keep all graded and excavated areas, around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 mph.
 - Adequately wet all storage piles, treat with chemical dust suppressants, or cover piles when material is not being added to or removed from the pile.
 - Wash down all equipment before moving from the property onto a paved public road.
 - Clean all visible track out from the paved public road by street sweeping or a High-Efficiency Particulate Air (HEPA) filter equipped vacuum device within 24 hours.
- For construction activities disturbing greater than one acre of rock containing naturally occurring asbestos, construction contractors are required to prepare an ADMP specifying measures that will be taken to ensure that no visible dust crosses the property boundary during construction. The plan must specify the following measures, to the extent deemed necessary by the BAAQMD to meet its standard:
 - Prevent and control visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property.

- Ensure adequate wetting or covering of active storage piles.
- Hydroseed or apply nontoxic soil stabilizers to disturbed surface areas and storage piles greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil that will remain inactive for seven days or more.
- Control traffic on onsite unpaved roads, parking lots, and staging areas—including a maximum vehicle speed of 15 mph or less.
- Provide as much water as necessary to control dust (without creating run-off) in any area of land clearing, earth movement, excavation, drillings, and other dust-generating activity.
- Control dust emissions from off-site transport of naturally occurring asbestos containing materials.
- Stabilize disturbed areas following construction.
- If required by the BAAQMD, air monitoring shall be implemented to monitor for off-site mitigation of asbestos dust during construction activities.

2.2.6 NOISE

This section discusses traffic noise effects related to the proposed BTI Project. The consideration of noise abatement is also included in this section. The analysis is based on the Final Noise Study Report (NSR) (Atkins 2012) and the Noise Abatement Decisions Report (NADR) (Atkins 2012), which were prepared in accordance with the Caltrans Traffic Noise Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects (Protocol) (Caltrans 2011) and the Technical Noise Supplement (TeNS).

2.2.6.1 REGULATORY SETTING

NEPA of 1969 provides the broad basis for analyzing and abating highway traffic noise effects. The intent of this law is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement under NEPA are described below.

The noise analysis outlined in this section focuses on the federal requirements; the State of California also provides regulatory guidelines related to new highway construction or reconstruction; these are described below.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with FHWA involvement (and the Department, as assigned), the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA¹³) is lower than the NAC for commercial areas (72 dBA). The following table, Table 2.2.6-1, lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 2.2.6-1. Activity Categories and Noise Abatement Criteria			
Activity Category	Activity Leq(h) ¹	Evaluation Location	Description of Activities
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67	Exterior	Residential.
C ²	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording

¹³ The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called *A-weighting*, written as *dBA* and referred to as *A-weighted decibels*.

Table 2.2.6-1. Activity Categories and Noise Abatement Criteria

Activity Category	Activity $L_{eq}(h)$ ¹	Evaluation Location	Description of Activities
			studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F			Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G			Undeveloped lands that are not permitted.
¹ The $L_{eq}(h)$ activity criteria values are for effect determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA). L_{eq} is the equivalent continuous noise level, an average sound level that varies over time, the “h” indicating over an hour.			
² Includes undeveloped lands permitted for this activity category.			

Figure 2.2.6-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise-levels discussed in this section with common activities.

In accordance with the Department *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

If it is determined that the BTI Project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the BTI Project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 dBA reduction in the future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include:

- the noise reduction design goal of 7 dB at one or more benefited receptors,
- the cost of noise abatement, and

- the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

State Regulations and Policies

TRAFFIC NOISE PROTOCOL FOR NEW HIGHWAY CONSTRUCTION AND RECONSTRUCTION PROJECTS

The Protocol specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction of federal or federal-aid highway projects. The NAC specified in the Protocol are the same as those specified in 23 CFR 772. The Protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA. The Protocol also states that a sound level is considered to approach an NAC level when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA, but 65 dBA is not).

The TeNS to the Protocol provides detailed technical guidance for the evaluation of highway traffic noise. This includes field measurement methods, noise modeling methods, and report preparation guidance.

SECTION 216 OF THE CALIFORNIA STREETS AND HIGHWAYS CODE

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise effect occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA $L_{eq(h)}$ in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. This requirement does not replace the “approach or exceed” NAC criterion for FHWA Activity Category D for classroom interiors, but it is a requirement that must be addressed in addition to the requirements of 23 CFR 772.

If a project results in a noise effect under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA $L_{eq(h)}$. If the noise levels generated from freeway and nonfreeway sources exceed 52 dBA $L_{eq(h)}$ prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

2.2.6.2 METHODS AND PROCEDURES

Field Measurement Procedures

A field noise study was conducted in accordance with recommended procedures in TeNS. The following is a summary of the procedures used to collect short-term and long-term sound level data. Short-term and long-term measurement locations are identified in the Final NSR.

SHORT-TERM MEASUREMENTS

Short-term monitoring was conducted at five locations on May 20, 2009 (ST-1 through ST-5), between the hours of 3:00 PM and 6:00 PM, using a Larson-Davis Model 820 sound level meter. Environmental factors that would influence noise levels such as population, land uses and peak hour traffic volumes have remained relatively constant in the BTI Project area between 2009 and 2012; therefore, it was determined that the

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
<u>Jet Fly-over at 300m (1000 ft)</u>	110	<u>Rock Band</u>
<u>Gas Lawn Mower at 1 m (3 ft)</u>	100	
<u>Diesel Truck at 15 m (50 ft), at 80 km (50 mph)</u>	90	<u>Food Blender at 1 m (3 ft)</u>
<u>Noisy Urban Area, Daytime</u>	80	<u>Garbage Disposal at 1 m (3 ft)</u>
<u>Gas Lawn Mower, 30 m (100 ft)</u>	70	<u>Vacuum Cleaner at 3 m (10 ft)</u>
<u>Commercial Area</u>		<u>Normal Speech at 1 m (3 ft)</u>
<u>Heavy Traffic at 90 m (300 ft)</u>	60	
<u>Quiet Urban Daytime</u>	50	<u>Large Business Office</u>
		<u>Dishwasher Next Room</u>
<u>Quiet Urban Nighttime</u>	40	<u>Theater, Large Conference Room (Background)</u>
<u>Quiet Suburban Nighttime</u>		<u>Library</u>
<u>Quiet Rural Nighttime</u>	30	<u>Bedroom at Night,</u>
		<u>Concert Hall (Background)</u>
	20	<u>Broadcast/Recording Studio</u>
	10	
<u>Lowest Threshold of Human Hearing</u>	0	<u>Lowest Threshold of Human Hearing</u>

Figure 2.2.6-1
Noise Levels of Common Activities

application of the 2009 short-term measurements were appropriate for the purposes of the NSR. Measurements were taken over a 15-minute period at each site. Short-term monitoring was conducted at residential uses adjacent to the major access routes. The short-term measurement locations are identified in Appendix A of the NSR.

During the short-term measurements, field staff attended each meter. Minute-to-minute L_{eq} values collected during the measurement period (typically 15 minutes in duration) were automatically recorded and subsequently logged manually. Dominant noise sources observed were also identified and logged. Traffic noise was observed to be the dominant contributor to the measured noise levels.

Traffic on the access roads were classified and counted during short-term noise measurements. Vehicles were classified as automobiles, medium-duty trucks, or heavy-duty trucks. An automobile was defined as a vehicle with two axles and four tires that are designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. The posted and existing travel speeds on each roadway were also noted.

LONG-TERM MEASUREMENTS

Long-term monitoring was conducted at four locations (LT-1 through LT-4) using a Larson-Davis Model 720 sound level meter. Long-term measurements are identified in Appendix A of the NSR. The purpose of these measurements was to identify diurnal traffic noise patterns throughout the typical day/night cycle. The long-term sound level data was collected over time periods of 24-hours beginning May 11, 2011, and ending May 26, 2011.

Long-term monitoring location LT-1 was located between Jennings Street and Ingalls Street on the westbound traffic side of Gilman Avenue. LT-2 was located between Hawes Street and Griffith Street on the westbound traffic side of Jamestown Avenue. LT-3 was located between Jennings Street and Ingalls Street on the westbound traffic side of Palou Avenue, and LT-4 was located between Arelious Walker Drive and Earl Street on the westbound traffic side of Innes Avenue.

Traffic Noise Levels Prediction Methods

Traffic noise levels were predicted using the FHWA Traffic Noise Model Version 2.5 (TNM 2.5). Key inputs to the traffic noise model were the locations of roadways, shielding features (e.g., topography and buildings), noise barriers, ground type, and receivers. Three-dimensional representations of these inputs were developed using CAD drawings, aerials, and topographic contours provided by the BTI Project sponsor.

Traffic noise was evaluated under existing conditions, design year no-project conditions, and design year conditions with the BTI Project. Loudest-hour traffic volumes, vehicle classification percentages, and traffic speeds under existing and project buildout year conditions were provided by the BTI Project's traffic consultant for input into the traffic noise model. The design year is defined as the future year used to estimate the probable traffic volume for which the BTI Project is designed. For the purposes of this analysis, the design year has been established as 2035, to account for the substantial roadway and transit network and development changes associated with the CP-HPS Plan that would occur over a period of about 20 years (Project construction initiated in 2011 and completed by 2029), and to account for the major changes to the area that are projected

to occur with development of the CP-HPS Plan. The highest average traffic volumes are predicted to occur during the PM; therefore, PM peak hour traffic volumes were used in the model as peak hour traffic typically coincides with the highest hourly L_{eq} in urban environments. Section 2.1.5, *Traffic and Transportation/Pedestrian and Bicycle Facilities*, summarizes the traffic volumes and assumptions used for modeling existing and design-year conditions with and without the BTI Project.

To validate the accuracy of the model, TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. For each receiver, traffic volumes counted during the short-term measurement periods were normalized to 1-hour volumes. These normalized volumes were assigned to the corresponding BTI Project area roadways to simulate the noise source strength at the roadways during the actual measurement period. Modeled and measured sound levels were then compared to determine the accuracy of the model and if additional calibration of the model was necessary.

Methods for Identifying Traffic Noise Effects and Consideration of Abatement

Traffic noise effects are considered to occur at receiver locations where predicted design-year noise levels are at least 12 dB greater than existing noise levels, or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise effects are identified, noise abatement must be considered for reasonableness and feasibility as required by 23 CFR 772 and the Protocol.

According to the Protocol, abatement measures are considered acoustically feasible if the abatement measure would result in a minimum noise reduction of 5 dB at effected receiver locations. In addition, noise barriers should be designed to intercept the line-of-sight from the exhaust stack of a truck to the first tier of receivers, as required by the Highway Design Manual, Chapter 1100. Other factors that affect feasibility of abatement measures include topography, access requirements for driveways and ramps, presence of local cross streets, utility conflicts, other noise sources in the area, and safety considerations.

The Protocol states that the determination of the reasonableness of noise abatement is more subjective than the determination of its feasibility. Section 772.5 of the regulation defines reasonableness as the combination of social, economic, and environmental factors considered in the evaluation of a noise abatement measure. As such, the Protocol utilizes the following factors in determining reasonableness: (1) the noise reduction design goal, (2) the cost of noise abatement, and (3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors). A cost-per-residence allowance is calculated for each benefited residence (i.e., residences that receive at least 5 dB of noise reduction from a noise barrier). The 2011 base allowance is \$55,000.

2.2.6.3 AFFECTED ENVIRONMENT

The analysis in this section is based on the Final NSR (Atkins 2012); this document analyzes noise effects relative to existing and planned land uses, according to the City staff. Based on the information provided by the City there are planned, programmed, or designed uses in the BTI Project vicinity. In particular, there are a number of new or

relocated residential and park uses to be developed under the CP-HPS Plan. The CP-HPS Plan EIR analyzes the Project's noise impacts relative to the San Francisco General Plan noise policies.

Existing Land Uses

The major noise source in the City is transportation noise. Traffic on the major thoroughfares throughout the BTI Project area and aircraft overflights create a background noise environment that is generally uniform throughout the area. Commuter rail and freight along the Caltrain railroad tracks and traffic for Candlestick Park events also contribute to the background noise in the area. A field investigation was conducted to identify land uses that could be subject to traffic and construction noise effects from the proposed BTI Project. Throughout the BTI Project area there is a mix of industrial, commercial, and residential uses (see Figure 1-2a and 1-2b).¹⁴ Often these uses are within the same city block or located within one block of one another. Noise-sensitive uses in the BTI Project area include residential uses, community facilities, schools, and parks/playgrounds.

In addition to existing developed uses, the Protocol also requires that undeveloped land that is permitted for development should be analyzed in the same manner as developed lands in that activity category. The Protocol indicates that development proposed for undeveloped areas are considered "permitted development" on the date of the issuance of a building permit by the local jurisdiction.

At this time, the proposed developments under the CP-HPS Plan have not yet been issued building permits. Where future sensitive receptors are proposed for development under the CP-HPS Plan, they are noted below.

As required by the Protocol, although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this effects analysis focuses on locations with defined outdoor activity areas, such as residential backyards and common use areas at multi-family residences.

As previously mentioned, the BTI Project area has been separated into seven different roadway segment groups (A–G) for the purposes of this analysis. These lettered analysis groups are identified in Appendix A of the NSR. Refer to Appendix A of the NSR for the location of sensitive receptors within each identified segment.

- **Segment A:** Segment A is part of the northern roadway improvements, and includes improvements along Cargo Way and Jennings Street. Land uses along these roadways are primarily industrial and do not include any sensitive receptors.
- **Segment B:** Segment B is partially included in the northern roadway improvements and also includes a secondary access route along Palou Avenue. Residential uses are located along Hunters Point Boulevard, Innes Avenue, and Palou Avenue. There is also a park along Hunters Point Boulevard. Most residential uses along these roadways have backyards that do not face the identified roadways; however, some have side yards that would be adjacent to the street. The side yards include some

¹⁴ Refer to Appendix A of the NSR for detailed maps of adjacent receptors.

limited shielding provided by wood slat fencing. In addition, there are some multi-family uses along Innes Avenue that include balconies.

In addition, the CP-HPS Plan proposes to develop new residential uses in the HPS area south of Donahue Street along Lockwood Street, Robinson Street, and Spear Avenue.

- **Segment C:** Segment C is part of the southern roadway improvements and includes primarily industrial uses. There are some residential uses along Thomas Avenue. In addition, the CP-HPS Plan proposes to develop new residential uses in the Candlestick Point area along Carroll Avenue. New residential uses would also include a redevelopment of the Alice Griffith Housing Project between Gilman Avenue and Carroll Avenue.
- **Segment D:** Segment D is located in the HPS Area. In the past, the HPS operated as a secured military site and has also contained some commercial and industrial uses. Currently, artist studios are the only active uses on the shipyard in the area of proposed roadway improvements. Large undeveloped parcels and vacant buildings surround these uses, isolating them from uses in the neighboring Bayview Hunters Point community. As such, there are no existing residential uses in this area.

In addition, the CP-HPS Plan proposes to develop a new HPS Transit Center and new residential uses within Segment D.

- **Segment E:** Segment E is part of the southern roadway improvements and also includes secondary access routes along Gilman Avenue, Ingerson Avenue, and Jamestown Avenue. Existing residential uses are located along the secondary access routes. The Candlestick Point site contains the Candlestick Point stadium, parking areas, and a number of large, vacant parcels.

In addition, the CP-HPS Plan proposes to develop new residential uses in the Candlestick Point area, south of Hawes Street, along Gilman Avenue and Jamestown Avenue, and along the proposed new roadways for Arelious Walker Drive and the Harney Way Extension. New residential uses would also include a redevelopment of the Alice Griffith Housing Project between Gilman Avenue and Carroll Avenue.

- **Segment F:** Segment F is part of the southern roadway improvements. Sensitive uses along Harney Way include multi-family residential uses and trail uses along the waterfront.
- **Segment G:** Segment G is part of the northern roadway improvements. Residential uses within Segment G occur along 25th Street. All other roadways do not include sensitive uses, but rather a mix of commercial and industrial uses line these roadway segments. (Refer to Appendix A of the NSR).

2.2.6.4 ENVIRONMENTAL CONSEQUENCES

The BTI Project is a Type I project as defined in 23 CFR 772.5(h); “construction on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.”

Noise Measurement Results

The existing noise environment in the BTI Project area characterized below is based on previously conducted noise monitoring, the methods of which are described above in Affected Environment.

SHORT-TERM NOISE MONITORING

Short-term noise monitoring was completed as part of the CP-HPS Plan EIR for the BTI Project area on May 20, 2009. The short-term measurement locations were completed at locations along Harney Way, Innes Avenue, Palou Avenue, Carroll Avenue, and Gilman Avenue. These roadways were selected because they are major access roads to the BTI Project area. Table 2.2.6-2 summarizes the results of the short-term noise monitoring conducted in the CP-HPS Plan EIR for the BTI Project area. Refer to Figure 2.2.6-2 for locations of these measurements.

Table 2.2.6-2. Summary of Short-Term Measurements									
Position	Street	Segment	Land Uses	Start Time	Duration (minutes)	Measured L_{eq}	Autos	Medium Trucks	Heavy Trucks
ST-1	Harney Way	F	Residential	3:10 PM	15	66.8	43	2	8
ST-2	Innes Avenue	B	Residential	4:00 PM	15	67.8	40	5	2
ST-3	Palou Avenue	B	Residential	4:25 PM	15	65.8	63	5	0
ST-4	Carroll Avenue	D	Residential	4:50 PM	15	64.8	28	2	0
ST-5	Gilman Avenue	D	Residential	5:20 PM	15	61.4	26	1	0

Source: Atkins 2012.

TNM 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. Table 2.2.6-2 compares measured and modeled noise levels at each measurement location (see Appendix A of the NSR). The predicted sound levels at all locations except ST-1 were within 2 decibels (dB) of the measured sound levels and were, therefore, considered to be in reasonable agreement with the measured sound levels. Therefore, no calibration of the model was made for these locations. For measurement location ST-1, there was additional traffic noise from traffic along US 101, which is southwest of the measurement location and in direct line of sight. To account for the additional traffic noise, a calibration factor of 3.0 dBA was applied to all receptors along Harney Way. The predicted sound level for ST-1 shown in Table 2.2.6-2 includes the calibration applied to Harney Way.

LONG-TERM MONITORING

Long-term monitoring was conducted at four locations (LT-1, LT-2, LT-3, LT-4). The long-term measurement locations were completed at locations along Jamestown Avenue, Gilman Avenue, Palou Avenue, and Innes Avenue. These roadways were selected because they are major access roads to the BTI Project area. The purpose of

these measurements was to describe variations in sound levels throughout the day, rather than absolute sound levels at a specific receptor of concern. The long-term sound level data was collected over time periods of 24-hours, beginning May 11, 2011, and ending May 26, 2011. The locations of these measurements are shown in Appendix A of the NSR. A summary of the long-term measurements is provided in Table 2.2.6-3, and additional detail for the long-term measurements is provided in Appendix C of the NSR.

Table 2.2.6-3. Summary of Long-Term Measurements			
Position	Street	Average 24-Hour Noise Level (dBA L_{eq})	Loudest Hour
LT-1	Gilman Avenue	66.0	8:00 PM-9:00 PM
LT-2	Jamestown Avenue	60.6	2:00 PM-3:00 PM
LT-3	Palou Avenue	64.3	11:00 AM-12:00 PM
LT-4	Innes Avenue	65.7	9:00 AM-10:00 AM
Source: Atkins 2012			

Future Noise Environment and Effects

Table 2.2.6-4 and Table 2.2.6-5 summarize the traffic noise modeling results for existing conditions and design-year conditions (2016 and 2035) with and without the BTI Project. Predicted design-year traffic noise levels with the BTI Project are compared to existing conditions and to design-year no-project conditions. The comparison to existing conditions is included in the analysis to identify traffic noise effects under 23 CFR 772. The comparison to no-project conditions indicates the direct effect of the BTI Project. As stated in the TeNS, modeling results are rounded to the nearest decibel before comparisons are made. In some cases, this can result in relative changes that may not appear intuitive. An example would be a comparison between sound levels of 64.4 and 64.5 dBA. The difference between these two values is 0.1 dB. However, after rounding, the difference is reported as 1 dB.

Modeling results in Table 2.2.6-5 indicate that predicted traffic noise levels for the 2035 design-year with-project conditions approach or exceed the NAC of 67 dBA $L_{eq(h)}$ for Activity Category B locations. This applies to nine of the residential locations modeled within Segments B, E, and F. The results also indicate that predicted traffic noise levels for the design-year with-project conditions would also approach or exceed the NAC of 67 dBA $L_{eq(h)}$, for Activity Category C land uses within Segment F; this applies to the park/trail uses along Harney Way. As shown in Table 2.2.6-5, impacted receivers would approach or exceed the NAC in 2035 without the BTI Project, indicating that increases in traffic noise levels are the result of future planned development such as the CP-HPS Plan and other development projects in the BTI Project vicinity.

As required by 23 CFR 772 and the Protocol traffic noise effects are considered to occur at receiver locations where predicted design-year noise levels are at least 12 dB greater than existing noise levels or where predicted design year noise levels approach or exceed the NAC for the applicable activity category. Where traffic noise effects are identified, noise abatement must be considered for reasonableness and feasibility.



NOTE: Note: Prior to the completion of Segment E, BRT service will follow an interim route of Harney Way, Hunters Point Expressway, Gilman Ave, Arellous Walker Drive, to Carroll Ave.

The roadway network shown within the Hunters Point Shipyard south of Crisp Road represents one of several alternatives under the CP-HPS Transportation Plan. Additional alternatives can be found in the CP-HPS Transportation Plan.

Figure 2.2.6-2
Noise Measurement Locations

Therefore, because traffic noise effects are predicted to occur in the 2035 design-year with-project conditions within the BTI Project area, noise abatement must be considered.

Table 2.2.6-4. Predicted Future Noise Analysis—2016

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Effect Type
-1, Segment B	54	56	56	None
M-2, Segment B	57	57	57	None
M-3, Segment B	57	61	61	None
M-4, Segment B	59	64	64	None
ST-2, Segment B	64	69	69	None ¹
LT-4, Segment B ²	61	65	65	None
M-5, Segment B	53	57	57	None
M-6, Segment B	54	62	62	None
M-7, Segment B	56	59	59	None
M-8, Segment B	59	61	61	None
ST-3, Segment B	64	66	66	None ¹
LT-3, Segment B	65	67	67	None ¹
M-9, Segment C	57	60	60	None
M-10, Segment C ³	51	56	56	None
ST-4, Segment C	60	65	65	None
M-11, Segment E	42	42	42	None
M-12, Segment E	43	44	44	None
M-13, Segment E	52	53	53	None
M-14, Segment E	55	56	56	None
M-15, Segment E	55	55	55	None
M-16, Segment E	52	52	52	None
M-17, Segment E	49	50	50	None
LT-1, Segment E	58	59	59	None ¹
M-18, Segment E	47	48	48	None
M-19, Segment E	57	58	58	None
M-20, Segment E	57	58	58	None
M-21, Segment E	48	48	48	None
M-22, Segment E	53	53	53	None
M-23, Segment E	54	55	55	None
M-24, Segment E	43	43	43	None
M-25, Segment E	53	53	53	None

Table 2.2.6-4. Predicted Future Noise Analysis—2016

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Effect Type
M-26, Segment E	51	52	52	None
M-27, Segment E	59	60	60	None
LT-2, Segment E	63	64	64	None ¹
ST-5, Segment E	64	64	64	None ¹
M-28, Segment E	59	60	60	None
M-29, Segment E	59	59	59	None
ST-1, Segment F	57	57	57	None
M-30, Segment F	52	53	53	None
M-31, Segment F	55	56	56	None
M-32, Segment F	58	59	59	None
M-33, Segment G	58	58	58	None
M-34, Segment G	56	56	56	None
M-35, Segment G	57	57	57	None
M-36, Segment G	56	56	56	None
¹ Measurement location was taken on sidewalk near the edge of roadway, not at residential setback. This area is also not considered an area of frequent human use. ² LT-4 is located near an undeveloped parcel, but is representative of other residential uses along Innes Avenue further to the northwest. ³ Alice Griffith Housing site is currently developed with residential uses, but will be redeveloped under a different configuration as part of the CP-HPS Plan.				

Table 2.2.6-5. Predicted Future Noise Analysis—2035

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Effect Type
M-1, Segment B	54	60	60	None
M-2, Segment B	57	64	64	None
M-3, Segment B	57	67	67	A/E
M-4, Segment B	59	69	69	A/E
ST-2, Segment B	64	74	74	None ¹
LT-4, Segment B ²	61	70	70	None ¹
M-5, Segment B	53	63	63	None
M-6, Segment B	54	66	65	Increase
M-7, Segment B	56	63	63	None
M-8, Segment B	59	64	64	None
ST-3, Segment B	64	70	70	None ¹
LT-3, Segment B	65	70	70	None ¹
M-9, Segment C	57	65	65	None
M-10, Segment C ³	51	65	65	Increase
ST-4, Segment C	60	73	71	None ¹
M-11, Segment E	41	66	66	A/E and Increase
M-12, Segment E	43	54	54	None
M-13, Segment E	52	60	60	None
M-14, Segment E	55	63	61	None
M-15, Segment E	55	62	64	None
M-16, Segment E	52	59	60	None
M-17, Segment E	49	56	57	None
LT-1, Segment E	58	65	71	None ¹
M-18, Segment E	47	55	56	None
M-19, Segment E	57	67	67	A/E
M-20, Segment E	57	67	67	A/E
M-21, Segment E	48	58	58	None
M-22, Segment E	53	61	61	None
M-23, Segment E	54	62	62	None
M-24, Segment E	43	50	50	None
M-25, Segment E	53	60	60	None
M-26, Segment E	51	60	60	None
M-27, Segment E	59	66	67	A/E

Table 2.2.6-5. Predicted Future Noise Analysis—2035

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Effect Type
LT-2, Segment E	63	70	71	None ¹
ST-5, Segment E	64	71	71	None ¹
M-28, Segment E	59	67	67	A/E
M-29, Segment E	59	65	65	None
ST-1, Segment F	57	73	71	A/E and Increase
M-30, Segment F	52	68	67	A/E and Increase
M-31, Segment F	55	71	73	A/E and Increase
M-32, Segment F	58	75	75	A/E and Increase
M-33, Segment G	58	65	65	None
M-34, Segment G	56	62	62	None
M-35, Segment G	57	64	64	None
M-36, Segment G	56	62	62	None

Note: A/E=Future noise conditions approach or exceed the Noise Abatement Criteria.

¹ Measurement location was taken on sidewalk near the edge of roadway, not at residential setback. This area is also not considered an area of frequent human use.

² LT-4 is located near an undeveloped parcel, but is representative of other residential uses along Innes Avenue further to the northwest.

³ Alice Griffith Housing site is currently developed with residential uses, but will be redeveloped under a different configuration as part of the CP-HPS Plan.

2.2.6.5 AVOIDANCE, MINIMIZATION, AND ABATEMENT

In accordance with 23 CFR 772, noise abatement is considered where noise effects are predicted in areas of frequent human use that would benefit from a lowered noise level. According to 23 CFR 772(15)(c), Federal funding may be used for the following abatement measures:

1. Construction of noise barriers, including acquisition of property rights, either within or outside the highway ROW. Landscaping is not a viable noise abatement measure.
2. Traffic management measures including, but not limited to, traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
3. Alteration of horizontal and vertical alignments.
4. Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely effected by traffic noise.

5. Noise insulation of Activity Category D land use facilities listed in Table 1. Post-installation maintenance and operational costs for noise insulation are not eligible for Federal-aid funding.

Based on the configuration and location of the BTI Project, noise barrier abatement is the primary form of noise abatement considered. Construction of new noise barriers was considered at the nine residential locations in Segments B, E and F, where there are currently no noise barriers. Each of the identified receptor locations where the predicted traffic noise levels for the design-year with-project conditions would exceed the NAC of 67 dBA $L_{eq(h)}$ are multi-story residential uses. Therefore, noise walls of 16 feet in height were considered along the frontage of each affected use. The results of the analysis for each noise barrier evaluated are summarized in Table 2.2.6-6. However, because of the configuration and location of the BTI Project, only one of the abatement measurements listed below is considered feasible. The following is a discussion of noise abatement considered for each evaluation area where traffic noise effects are predicted, and why abatement was not considered to be feasible.

Table 2.2.6-6. Predicted Future Noise Analysis—2035

Receptor # and Location	Land Use	Receptor Height Above Level (feet)	Wall Height (feet)	Design Year Noise Level With Project $L_{eq(h)}$ (dBA)	Design Year Noise Level With Project and Sound Wall $L_{eq(h)}$ (dBA)	Reduction (dBA)	Meet Minimum Reduction Goal of 5 dBA
M-3, Segment B	Residential	15	16	67	64	3	No
M-4, Segment B	Residential	25	16	69	69	0	No
M-6, Segment B	Future Residential	15	16	65	58	7	Yes
M-10, Segment C	Future Residential	15	16	65	57	8	Yes
M-11, Segment E	Future Residential	15	16	66	58	7	Yes
M-19, Segment E	Residential	15	16	67	59	8	Yes
M-20, Segment E	Residential	15	16	67	59	8	Yes
M-27, Segment E	Residential	15	16	67	57	10	Yes
M-28, Segment E	Residential	15	16	67	59	8	Yes
ST-1, Segment F	Residential	25	16	71	67	4	No
M-30, Segment F	Residential	25	16	67	58	9	Yes

Source: Atkins 2012

Segment A

There are no sensitive uses in Segment A; therefore, there are no adverse effects in this area and noise abatement is not required.

Segment B

The traffic noise modeling results in Table 2.6.6-4 and Table 2.2.6-5 indicate that traffic noise levels at residences in Segment B are predicted to be in the range of 60 to 69 dBA $L_{eq(h)}$ in the 2035 design year. The results also indicate that the increase in noise

between existing conditions and the design year is predicted to be between 5 and 12 dB. Because the noise level in the design year is predicted to approach or exceed the noise abatement criterion (67 dBA $L_{eq(h)}$) and would result in a substantial noise increase, noise abatement must be considered in this segment.

Noise effects were identified for residential uses along Innes Avenue for residences with back or side yards that face the roadway and balconies that face the roadway. Construction of a 16-foot high noise barrier would reduce levels (see Table 2.2.6-6); however, because this is a local roadway with street parking, bicycle lanes, residences with street frontage and driveways that directly access the roadways, it would not be feasible to construct a noise barrier or acquire property to buffer noise in these locations.

Segment C

The traffic noise modeling results in Table 2.2.6-4 and Table 2.2.6-5 indicate traffic noise levels in Segment C would be 65 dBA $L_{eq(h)}$ in the 2035 design year. The results also indicate that the increase in noise between existing conditions and the design year is between 8 and 14 dB; however, areas where the substantial increase is identified in Segment C are currently undeveloped lands. Under the 2035 project buildout year, these undeveloped lands are designated for future residential uses that would be constructed as part of the CP-HPS Plan. According to 23 C.F.R. Section 772, undeveloped lands should be analyzed in the same manner as developed lands when the undeveloped lands are permitted for development. Development proposed on undeveloped land is considered permitted on the date of issuance of a building permit by the local jurisdiction or by the appropriate governing entity. The CP-HPS Plan has been adopted by the City of San Francisco, but to date, no building permit has been issued. Therefore, noise abatement need not be considered for the undeveloped lands in Segment C.

Segment D

There are no sensitive uses in Segment D; therefore, there are no adverse effects in this segment and noise abatement is not required.

Segment E

The traffic noise modeling results in Table 2.2.6-4 and Table 2.2.6-5 indicate traffic noise levels at residential uses in Segment E are predicted to be in the range of 50 to 67 dBA $L_{eq(h)}$ in the 2035 design year. The results also indicate that the increase in noise between existing conditions and the design year is between 7 and 25 dB. Because the noise level in the design year is predicted to approach or exceed the noise abatement criterion (67 dBA $L_{eq(h)}$) and would result in a substantial noise increase, noise abatement must be considered in this segment.

Noise effects were identified for residential uses along Jamestown Avenue and Gilman Avenue for residences with back or side yards that face the roadway. Construction of a 16-foot-high noise barrier would reduce levels (see Table 2.2.6-6); however, because these are local roadways with street parking, bicycle lanes, residences with street frontage and driveways that directly access the roadways, it would not be feasible to construct a noise barrier or acquire property to buffer noise in these locations.

Segment F

The traffic noise modeling results in Table 2.2.6-4 and Table 2.2.6-5 indicate traffic noise levels at residential uses in Segment F are predicted to be in the range of 67 to 75 dBA

$L_{eq(h)}$ in the 2035 design year. The results also indicate that the increase in noise between existing conditions and the design year is between 16 and 17 dB. Because the noise level in the design year is predicted to approach or exceed the noise abatement criterion (67 dBA $L_{eq(h)}$) and would result in a substantial noise increase, noise abatement must be considered in this segment.

Effects were identified for multi-family residences that are four stories in height and located at a higher elevation than the roadway, because of the topography and the proposed width of the roadway; it would not be possible to construct a barrier to break the line of sight to these receptors. Construction of a 16-foot-high barrier would reduce noise levels for receptors on the first and second stories (see Table 2.2.6-6); however, noise levels at the upper stories would not receive any benefit from a 16-foot noise barrier. The preliminary abatement measure is considered feasible because it is predicted to reduce noise levels by 5 dBA at an effected receptor and meets the design goal by reducing 2035 design year traffic noise levels by 7 dBA at 8 effected receptors along Harney Way. The current allowance per benefited receptor of \$55,000 is based on the published Caltrans annual Construction Price Index. The construction allowance for this barrier would be \$440,000. While the noise barrier was found to be feasible, it could not be constructed for less than the allowance and is therefore considered not reasonable.

In addition, noise effects in Segment F were also predicted for the trail and park uses to the south of Harney Way, represented as receivers M-31 and M-32 in Table 2.2.6-4 and Table 2.2.6-5. As shown in Appendix A of the NSR, this park is located between the roadway and the San Francisco Bay and consists only of walking trail uses, and no active recreational facilities. Although this receiver represents an area of human use, it is associated with footpaths that has only transitory use (i.e., less than an hour) and would not result in a cumulative amount of time on a daily, weekly, or yearly level that would be considered frequent or have detrimental effects on the activities of humans at the receiver location. Thus, a lowered noise level at this location would not be a benefit and abatement is not considered further for this park.

Segment G

The traffic noise modeling results in Table 2.2.6-4 and Table 2.2.6-5 indicate traffic noise levels at residential uses in Segment G are predicted to be in the range of 62 to 65 dBA $L_{eq(h)}$ in the 2035 design year. The results also indicate that the increase in noise between existing conditions and the design year is between 6 and 7 dB. Because the predicted noise level in the design year is not predicted to approach or exceed the noise abatement criterion (67 dBA $L_{eq(h)}$) and would not result in a substantial increase in noise, noise abatement is not required.

Construction Noise

During construction of the BTI Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by the Department Standard Specifications Section 14-8.02.

Table 2.2.6-7 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise

produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Table 2.2.6-7. Construction Equipment Noise	
Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82
Source: Atkins 2012 [Federal Transit Administration 1995]	

No adverse noise effects from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise effects from construction:

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by the Department, the contractor will implement appropriate additional noise abatement measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

2.3 BIOLOGICAL ENVIRONMENT

2.3.1 NATURAL COMMUNITIES

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. The emphasis of the section is on the ecological function of the natural communities within the area. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the federal Endangered Species Act (ESA) are discussed in Section 2.3.5, *Threatened and Endangered Species*. Wetlands and other waters are discussed in Section 2.3.2., *Wetlands and Other Waters*.

2.3.1.1 AFFECTED ENVIRONMENT

Natural communities and land use types within the BTI Project area were described in the 2011 *Bayview Transportation Improvements Project Natural Environment Study (Minimal Impacts)* (Caltrans and City and County of San Francisco 2011).

The BTI Project site is highly urbanized, and consists primarily of paved roadways, sidewalks, planted medians, ornamental landscaping and street trees, traffic lights, streetlights, signage, and transit infrastructure. A mixture of urban and residential development occurs within, and directly surrounds, the BTI Project site. Elevations within the BTI Project site range from approximately 6 feet at Harney Way to 180 feet along the lower slope of Bayview Hill along the western side of Candlestick Park. A steep rocky bluff along Innes Avenue reaches elevations of approximately 100 feet; however, most areas within the BTI Project site are under 50 feet elevation and are relatively level to moderately sloping.

Four natural community/land use types occur in or adjacent to the BTI Project site: 1) developed and ornamental, 2) disturbed coastal scrub, 3) serpentine grassland and outcrop, and 4) willow scrub.

Developed and Ornamental Areas

Vegetation. As previously discussed, the vast majority of the BTI Project site is urbanized. The paved areas are mostly devoid of vegetation, and debris (e.g., plastic bags, paper, and other trash) is scattered along some of the roadsides. Hardy weeds, such as cheeseweed (*Malva parviflora*) and old-man-of-spring (*Senecio vulgare*), occur within areas of cracked pavement. Landscaped areas include common plantings, such as pride of Madeira (*Echium candicans*), ivy (*Hedera helix*), and oleander (*Nerium oleander*). Street trees are also mostly nonnative and include plume acacia (*Albizia lophantha*), water gum (*Tristania laurina*), madrones (*Arbutus* sp.), lollypop tree (*Myoporum laetum*), blue gum (*Eucalyptus globulus*), Brisbane box (*Lophostemon confertus*), southern magnolia (*Magnolia grandiflora*), New Zealand Christmas tree (*Metrosideros excelsa*), and ornamental pines (*Pinus* sp.). Small numbers of native, but planted, street trees such as red willow (*Salix laevigata*), toyon (*Heteromeles arbutifolia*),

and coast live oak (*Quercus agrifolia*) are also present. However, these native species comprise a very small percentage of the overall total and do not provide biological functions or values similar to that provided by such species within natural habitats.

Wildlife. The developed areas within the BTI Project site are of limited use to wildlife species because of frequent human disturbance and likelihood of injury or mortality from vehicular traffic, as well as a lack of cover and food. Many such developed areas have little or no vegetation. Developed areas in the BTI Project site may be used as movement corridors by mammalian species such as the non-native domestic cat (*Felis catus*), or the domestic dog (*Canis lupus familiaris*), which prey on smaller wildlife species. Species such as Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), and rock pigeon (*Columbia livia*), which were observed perched on lights, buildings, and above-ground wiring, typically forage and roost within developed habitats.

Landscaped portions of the BTI Project site support somewhat greater diversity of wildlife species, depending on certain vegetation characteristics such as height, density, volume, and vertical stratification. Within the BTI Project site, the landscaped areas include trees and shrubs that many common and urban-adapted wildlife species may inhabit. Native birds such as the American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), and house finch (*Carpodacus mexicanus*) nest and forage in these habitats. Mammalian communities of these highly urbanized habitats are dominated by introduced species such as the Virginia opossum (*Didelphis virginiana*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), and Norway rat (*Rattus norvegicus*).

Disturbed Coastal Scrub

Vegetation. An area of disturbed coastal scrub is located in the BTI Project site at the base of Bayview Hill to the west of the proposed alignments of Jamestown Avenue and the Arelius Walker Way Extension along the border of Candlestick Park (Figure 2.3-1). This area is dominated by a mix of nonnative grasses such as soft chess (*Bromus hordeaceus*) and wild oats (*Avena fatua*), coyote brush (*Baccharis pilularis*), and invasives such as fennel (*Foeniculum vulgare*). Along the southern and western edges of this small area of scrubby habitat, several lollypop trees (*Myoporum laetum*) and some blue gum (*Eucalyptus globulus*) trees occur.

Wildlife. Wildlife use of isolated areas of disturbed coastal scrub habitat within urban areas such as these is lower than in contiguous and less disturbed coastal scrub habitats because of the decreased density of vegetation, prevalence of weedy species, small available area for foraging and cover, and anthropogenic disturbance. In general, coastal scrub shrubs provide berries or nectar resources for wildlife and, when present, the dense understory provides considerable protection for small rodents and rabbits, Botta's pocket gophers (*Thomomys bottae*), deer mice (*Peromyscus maniculatus*), and California mice (*Peromyscus californicus*). Larger mammals that can persist in highly urbanized settings may also use the area, such as striped skunks (*Mephitis mephitis*) and raccoons (*Procyon lotor*). Typical resident avian species of this habitat include the California and spotted towhee (*Pipilo crissalis* and *Pipilo maculatus*, respectively) and northern mockingbird (*Mimus polyglottos*). Typical reptiles of this community include western fence lizards (*Sceloporus occidentalis*), while common invertebrates such as honey bees (*Apis mellifera*) and cabbage whites (*Pieris rapae*) would be expected to forage on coyote brush and on slow-growing forbs in the grassier sections of the area.



NOTE: The roadway network shown within the Hunters Point Shipyard south of Crisp Road represents one of several alternatives under the CP-HPS Transportation Plan. Additional alternatives can be found in the CP-HPS Transportation Plan.

Figure 2.3-1
Vegetation in the Project Area

Serpentine Grassland and Outcrops

Vegetation. Areas of serpentine grasslands and rock outcrops occur along the western side of Hunters Point Boulevard and the southern side of Innes Avenue (Figure 2.3-1), immediately adjacent to the BTI Project site. The area adjacent to Hunters Point Boulevard supports deeper soils and a more moderate, sloping topography, while the area to the south of Innes Avenue is comprised of a long, steep, crumbling rock slope rising abruptly from street level to approximately 30–35 feet. These areas support relatively intact, and in some areas, moderate to high quality, native-dominated habitat within the wider urban matrix. Native grasses, such as purple needlegrass (*Nassella pulchra*), occur intermixed with non-natives such as wild oats. Within the BTI Project site, serpentine influence on the vegetation was negligible (e.g., at the base of the rock cliff along Innes Avenue) and the grassland was comprised of a thick, tall (up to 2 feet), uniform canopy of wild oats. Along Hunters Point Boulevard, an approximately 3-foot section of hillside between the sidewalk and the fence has been completely denuded through herbicide use. However, outside the BTI Project site where the serpentine influence is strongest and the habitats are less disturbed, nonnative grass cover is greatly reduced and the distinctively lower and more open bunchgrass structure of purple needlegrass-dominated serpentine grassland can be observed. These higher-quality serpentine areas adjacent to the BTI Project site occur on fractured rock cliff faces along Innes Avenue and in areas of the hillside grassland behind the protective fence along Hunters Point Boulevard. Areas along the rock slope on Innes Avenue support subshrubs such as coast buckwheat (*Eriogonum latifolium*) growing on small fractured faces. In both areas, ample native wildflower cover was observed, including Ithuriel's spear (*Triteleia laxa*), California poppy (*Eschscholzia californica*), red maids (*Calandrinia ciliata*), and soap plant (*Chlorogalum pomeridianum*).

Wildlife. Many of the wildlife species found in small areas of disturbed coastal scrub habitat are also found in serpentine grassland and rock outcrop infill areas such as observed on the project site. Serpentine grassland habitat provides a diversity of spring-flowering plants that are utilized by butterflies. Additionally, the small scrub species associated with the rock outcrops such as coast buckwheat are used by hummingbirds, such as the Anna's hummingbird (*Calypte anna*). This scrubby rock outcrop community also attracts birds that forage for insects within the scrub canopy, such as the white-crowned sparrow (*Zonotrichia leucophrys*), dark-eyed junco (*Junco hyemalis*), and bushtit (*Psaltriparus minimus*). The grasslands also provide suitable habitat for small burrowing rodents such as California ground squirrels (*Spermophilus beecheyi*).

Willow Scrub

Vegetation. A small area of willow scrub occurs along the inside/eastern bend of Alana Way adjacent to the southern portion of the project site (Figure 2.3-1). This area supports a thick cover of arroyo willows (*Salix lasiolepis*) growing over a low, boggy ditch, which supports common wetland species such as tall umbrella sedge (*Cyperus eragrostis*) and velvet grass (*Holcus lanatus*). This area was moist, but did not contain standing water, during May and June 2011 site visits.

Wildlife. Willow scrub habitats within infill areas provide low areas where water collects and thus drinking water for wildlife, at least seasonally when standing water is present. Also, such resources may be used as foraging and breeding habitat by common amphibians such as the Pacific chorus frog (*Pseudacris regilla*), although barriers to dispersal to and from this small area from the surrounding road surfaces greatly diminish

the suitability of this area for frogs. In addition, the willow scrub community provides foraging habitat for a variety of migrant songbirds, as well as foraging and breeding habitat for species such as song sparrows. Small mammals found in adjacent habitats may also forage or seek cover in the willow scrub community.

Wildlife Corridors and Habitat Fragmentation

Because of the heavily developed nature of the BTI Project area, no migration routes, wildlife corridors, or other areas important to animal movement are present here. No contiguous natural habitat is present in the BTI Project area, as urbanization has already fragmented natural habitat in the vicinity. Likewise, the BTI Project does not include any components that would affect aquatic habitats or otherwise affect fish passage.

2.3.1.2 ENVIRONMENTAL CONSEQUENCES

The majority of the area to be affected by the BTI Project is dominated by developed and ornamental land uses. These land uses provide very limited, low-quality habitat for most plant and animal species owing to the small amount of native vegetation, simple habitat structure, and intensive anthropogenic disturbance. As a result, the project would have little effect on these land uses.

Limited effects on disturbed coastal scrub would occur. Although this vegetation community provides higher-quality habitat than developed and ornamental land uses, very little coastal scrub would be disturbed, and this patch of scrub is already degraded by the surrounding developed land uses. Therefore, little adverse effect on coastal scrub communities would occur as a result of the BTI Project.

Impacts to serpentine grasslands and outcrops, and to willow scrub, have been avoided through Project design.

The BTI Project Build Alternative would remove 255 trees in the Project area (Table 2.3-1). An additional 135 trees would be removed within the wider Study area, due to planned development. Altogether, a total of 390 trees would be removed within the Study area. The majority of these trees to be removed in the study area are nonnative, ornamental species such as lollypop tree, Brisbane box, southern magnolia, New Zealand Christmas tree, and ornamental pines, though small numbers of planted native trees such as red willow, toyon, and coast live oak would also be removed.

The majority of the trees to be removed as part of the BTI Project are relatively small-diameter and short, and thus provide limited shade for human use, limited structural complexity for wildlife use, and little native foliage to support insects and bird species that prey upon them. The trees to be removed are widely spaced along the streets in the Project area and lack any understory. As a result, they do not provide suitable habitat for birds, mammals, and other animals requiring dense cover or requiring habitat connectivity for dispersal. Further, the trees to be removed represent a very small fraction of the trees present even in the immediate vicinity of the Project area; for example, in the residential areas between existing Candlestick Park and Third Street, a review of aerial photos indicates that the vast majority of trees, as well as the tallest and most well developed trees, are behind residences rather than along the streets where trees would be removed by the BTI Project. As a result, the functions and values provided by trees in the Project vicinity would continue to be provided by the trees that remain in the vicinity after Project implementation. Removal of street trees by the BTI

Project would have little effect on the biology of the urban forest within San Francisco or on populations of the animal species that use these trees because of the low habitat quality provided by these small, sparsely scattered, primarily non-native street trees, the lack of understory associated with these trees, and the very small proportion of locally and regionally available trees represented by those that would be removed. In addition, trees that are removed would be replaced by proposed plantings for the BTI Project as described in Section 2.3.1.3, *Avoidance, Minimization, and/or Mitigation Measures*.

Table 2.3-1. Street Trees to be Removed along Roadways in the Study Area

Scientific Name	Common Name	Harney Way	Gilman Ave	Ingalls Street	Thomas Ave	Palou Ave	Total
BTI Project No Build Alternative Tree Removals							
<i>Acacia baileyana</i>	Cootamundra wattle	-	-	-	-	2	2
<i>Acacia sp.</i>	Acacia	9	7	-	-	-	16
<i>Callistemon sp.</i>	Bottlebrush	1	2	-	-	-	3
<i>Casuarina sp.</i>	Sheoak	-	1	-	-	-	1
<i>Ceanothus thyrsiflorus</i>	Blueblossom	7	1	-	-	-	8
<i>Cinnamomum camphora</i>	Camphor tree	-	3	-	-	-	3
<i>Eucalyptus globulus</i>	Blue gum	10	2	-	-	-	12
<i>Eucalyptus sp.</i>	Eucalyptus	-	5	-	-	1	6
<i>Heteromeles arbutifolia</i>	Toyon	2	1	-	-	-	3
<i>Juniperus sp.</i>	Juniper	1	2	-	-	-	3
<i>Lophostemon confertus</i>	Brisbane box	-	-	-	-	-	0
<i>Magnolia grandiflora</i>	Southern magnolia	-	4	-	-	47	51
<i>Metrosideros excelsa</i>	New Zealand Christmas tree	-	8	-	-	35	43
<i>Myoporum laetum</i>	Lollypop tree	52	22	-	-	-	74
<i>Myrica sp.</i>	Wax myrtle	1	-	-	-	-	1
<i>Pinus radiata</i>	Monterey pine	-	9	-	-	-	9
<i>Pinus sp.</i>	Ornamental pine	39	12	-	-	-	51
<i>Pittosporum sp.</i>	Mock orange	-	1	-	-	4	5
<i>Prunus cerasifera</i>	Cherry plum	-	1	-	-	7	8
<i>Quercus agrifolia</i>	Coast live oak	-	8	-	-	-	8
<i>Rhamnus californica</i>	California buckthorn	-	1	-	-	-	1
<i>Salix laevigata</i>	Red willow	16	-	-	-	-	16
<i>Schinus molle</i>	Peruvian peppertree	-	-	-	-	1	1
<i>Umbellularia californica</i>	California bay	-	1	-	-	-	1

Table 2.3-1. Street Trees to be Removed along Roadways in the Study Area

Scientific Name	Common Name	Harney Way	Gilman Ave	Ingalls Street	Thomas Ave	Palou Ave	Total
<i>Washingtonia filifera</i>	California fan palm	-	1	-	-	-	1
---	Unknown tree	-	7	-	-	-	7
Totals by Street¹		138	99	0	0	97	334
BTI Project Build Alternative Tree Removals							
---	---	138	31	48	8	30	255
Totals by Street¹		138	31	48	8	30	255
Note: The BTI Project No Build Alternative tree removal count covers a larger study area than Project Build Alternative project. The No Build Alternative assumes CP-HPS Plan buildout excluding the BTI elements, and other planned or future projects. The BTI Project Build Alternative tree removal count considers tree locations (i.e., distance from the curb and whether the tree is within the ROW) exclusively within the BTI project area and whether BTI Project scope would require tree removal.							
¹ Source: Tree Survey data for Harney Way and southeastern Gilman Avenue (Section E3 and E4) from the H.T. Harvey & Associates 2009b. All other data was collected in a field survey conducted in Summer 2012.							

2.3.1.3 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The BTI Project has been designed to avoid effects on the most sensitive vegetation communities: serpentine grasslands and outcrops, and willow scrub. Widening of existing pavement would extend no more than a few feet into the toe of slope along Innes Avenue and Hunters Point Boulevard where serpentine communities occur. These toe-of-slope areas do not represent serpentine communities, which occur on outcrops or very shallow, serpentine-derived soils higher up on the slopes. Rather, the toe-of-slope areas to be affected support deeper soils that are dominated by non-native plants rather than native species. The Project was specifically re-designed following the identification of these serpentine outcrops to avoid affecting serpentine communities by eliminating substantial grading into the serpentine hillsides.

The only BTI Project feature that would occur on the east side of Alana Way where the small patch of willow scrub is located is a single pole for a traffic signal. The BTI Project has been designed to locate this pole outside of the willow scrub to avoid effects on this vegetation type.

Because effects on serpentine grasslands and outcrops, and to willow scrub, would be entirely avoided, no mitigation measures pertaining to these communities are required.

Due to the limited nature of effects on disturbed coastal scrub, and the low quality of habitat provided by this coastal scrub and the developed/ornamental land uses, no avoidance, minimization, or mitigation measures for effects on these communities/land use types are required.

The Build Alternative would increase developed and ornamental community/land use types within the Project Area. In addition, it would include the planting of numerous street trees in accordance with the Streetscape Element (Chapter 6) of the City's Better Streets Plan. Replacement tree species would adhere to the San Francisco Street Tree Species List and would be approved by the Department of Public Works prior to planting. Native trees will be favored, but site-appropriate non-native trees that provide food or

structural resources that are particularly valuable to native wildlife species may also be considered. Thus, the Build Alternative would increase the number of street trees in the Project area by both replacing the removed trees and planting infill trees along some roadways to increase street tree density. Protected trees that occur along Cargo Way would not be removed. The contractor would be required to obtain street-tree planting permit from the Department of Public Works to ensure that street trees are properly planted to maximize tree benefits, protect public safety, and limit conflicts with infrastructure.

2.3.2 WETLANDS AND OTHER WATERS

This section describes wetlands and other waters of the United States in the BTI Project area.

2.3.2.1 REGULATORY SETTING

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 USC 1344) is the primary law regulating wetlands and surface waters. The CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (USEPA).

USACE issues two types of 404 permits: Standard and General permits. Nationwide permits, a type of General permit, are issued to authorize a variety of minor project activities with no more than minimal effects. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with USEPA's Section 404(b)(1) Guidelines (USEPA 40 CFR Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have less effects on waters of the United States, and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as FHWA and/or the Department, as assigned, cannot

undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications in compliance with Section 401 of the CWA. See Section 2.2.2 *Water Quality and Storm Water Runoff* for additional details.

2.3.2.2 AFFECTED ENVIRONMENT

The occurrence and distribution of wetlands and other waters of the United States in the project area were discussed in the 2011 *Bayview Transportation Improvements Project Natural Environment Study (Minimal Impacts)* (Caltrans and City and County of San Francisco 2011). A wetland delineation for the CP-HPS Plan (H. T. Harvey & Associates 2009a) covered much of the BTI Project area. USACE verified the findings of the delineation with a Jurisdictional Determination dated August 31, 2009. The remainder of the BTI Project area was surveyed for wetlands and other waters by H. T. Harvey & Associates biologists during field surveys conducted specifically for the BTI Project in May and June 2011.

The only wetlands located within the BTI Project area occur in the willow scrub habitat along Alana Way described in Section 2.3.1.1 (Figure 2.3-1). These wetlands were not included in the wetland delineation study area for the CP-HPS Plan. Because these wetlands are not proposed to be affected by the BTI Project, no formal delineation of these wetlands was conducted.

These wetlands are dominated by arroyo willows growing over a low, boggy ditch, which supports common wetland species such as tall umbrella sedge (*Cyperus eragrostis*) and velvet grass (*Holcus lanatus*). This area was moist, but did not contain standing water, during the May and June 2011 site visits. Runoff from surrounding roadways provides some of the hydrology supporting these wetlands, but moist soil conditions during May and June 2011 suggest some support of wetland conditions via groundwater as well.

Although jurisdictional wetlands and other waters of the United States occur along the San Francisco Bay shoreline in other locations near the BTI Project area, none of those other jurisdictional areas are located within the BTI Project limits.

2.3.2.3 ENVIRONMENTAL CONSEQUENCES

The BTI Project would not result in effects on wetlands or other waters of the United States. As described in Section 2.3.1.2, the willow scrub that supports potentially jurisdictional wetlands would be entirely avoided by the BTI Project, and no other jurisdictional areas are present in the BTI Project area.

2.3.2.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The BTI Project has been designed to avoid effects on the only potentially jurisdictional wetlands in the BTI Project area. The only BTI Project feature that would occur on the east side of Alana Way where the small patch of willow scrub is located is a single pole for a traffic signal. The BTI Project has been designed to locate this pole outside of the willow scrub to avoid effects on this wetland. The BTI Project would not affect other waters (e.g., waters associated with San Francisco Bay).

Indirect effects on wetlands and other waters (e.g., from siltation that may occur due to project mobilization of soils) would be avoided via measures identified in Section 2.2.2 *Water Quality and Storm Water Runoff*.

Because no effects on wetlands and other waters would occur, no mitigation is required.

2.3.3 PLANT SPECIES

This section describes the potential for occurrence of special-status plant species on the BTI Project site.

2.3.3.1 REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) is responsible for the protection of federally listed special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. "Special status" is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to species that are formally listed or proposed for listing as endangered or threatened under the ESA. Please see Section 2.3.5 *Threatened and Endangered Species* in this document for detailed information regarding these species. This section of the document discusses all federally protected special-status plant species, including USFWS candidate species.

The regulatory requirements for ESA can be found at USC 16, Section 1531, et seq. See also 50 CFR Part 402.

2.3.3.2 AFFECTED ENVIRONMENT

Prior to conducting fieldwork, H. T. Harvey & Associates biologists reviewed several sources for information on the potential for occurrence of special-status plants and for habitats potentially supporting such plants. Those sources included the *CP-HPS Plan Final EIR* (San Francisco Redevelopment Agency 2010); recent ecological studies prepared for the CP-HPS Plan (H. T. Harvey & Associates 2009a, 2009b); an earlier version of the BTI Project Natural Environment Study (NES) (Jones and Stokes 2007); the California Natural Diversity Database (CNDDB) (2011) for the *Hunters Point* and *San Francisco South* U.S. Geological Survey (USGS) 7.5-minute quadrangle maps and the surrounding quadrangles (*Point Bonita*, *San Francisco North*, *Oakland West*, *Oakland East*, *San Leandro*, *Redwood Point*, *San Mateo*, and *Montara Mountain*); and California Native Plant Society (CNPS) (2011) lists. Appendix C contains a list of federally listed species, proposed and candidate species, and critical habitat, downloaded from the USFWS website, as well as a list of species for which the CNDDB contains records from the *Hunters Point* and *San Francisco South* USGS quadrangles. In addition, a recent (5 September 2012) critical habitat notice for the Franciscan manzanita (*Arctostaphylos franciscana*; USFWS 2012) was reviewed. Collectively, these sources were used to determine which special-status plants had some potential to occur in the BTI Project area.

As described in Section 2.3.1.1 above, the BTI Project site is highly urbanized, and consists primarily of paved roadways, sidewalks, planted medians, ornamental landscaping and street trees, traffic lights, streetlights, signage, and attendant infrastructure. A mixture of urban and residential development occurs within, and directly surrounds, the BTI Project site.

The dominant plants within each of the four natural community/land use types that occur in or adjacent to the project site are described in Section 2.3.1.1.

Most of the special-status plant species considered are not expected to occur within the BTI Project area because they are associated with habitat or soil types that are not present (e.g., strongly alkaline soils, vernal pool habitat, sand dunes, seeps, and cismontane woodland habitat). Others would not be present due to the extensive disturbance that has occurred, and continues to occur, along roadsides where project improvements would take place. In addition, the soils that are currently present within the BTI Project site contain a substantial amount of fill material (i.e., nonnative soil types present in the cut and fill soils present within constructed roadway areas) that has been compacted, and that would therefore not support special-status plants.

The only area within or adjacent to the BTI Project site that was considered capable of supporting special-status plant species is the serpentine grasslands and outcrop habitat. A suite of serpentine- and rock-outcrop adapted herbaceous special-status species could potentially occur in these habitats, including San Francisco wallflower (*Erysimum franciscanum*), coast rock cress (*Arabis blepharophylla*), San Francisco collinsia (*Collinsia franciscanum*), white-rayed pentachaeta (*Pentachaeta bellidiflora*), and San Francisco owl's clover (*Triphysaria floribunda*). However, the improvements along Hunters Point Boulevard and Innes Avenue have been carefully designed to avoid the sensitive serpentine habitats capable of supporting these species, thus excluding these habitats from the BTI Project site. Within the BTI Project site and all expected impact areas, including the disturbed coastal scrub, habitat of a suitable quality to support these or any other special-status plants occurring within the BTI Project vicinity was determined to be entirely absent. Thus, no special-status plant species are expected to occur on the BTI Project site.

2.3.3.3 ENVIRONMENTAL CONSEQUENCES

Because no special-status plants are known or expected to occur within the BTI Project limits, no effects on these species would occur. The serpentine slopes and outcrops along Innes Avenue and Hunters Point Boulevard are the area upslope from the BTI Project's limits. Therefore, no direct or indirect effects, including sedimentation, changes in runoff patterns, staging or access, on such areas could occur as a result of the BTI Project.

2.3.3.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Because no special-status plants are known or expected to occur within the BTI Project limits, no avoidance, minimization, and/or mitigation measures pertaining to special-status plants are required.

2.3.4 ANIMAL SPECIES

This section describes the potential for occurrence of special-status animal species on the BTI Project site.

2.3.4.1 REGULATORY SETTING

Many federal laws regulate impacts on wildlife. USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for

listing under the federal Endangered Species Act. Species listed or proposed for listing are discussed in the Threatened and Endangered Species section below. All other federally protected special-status animal species are discussed here, including USFWS or NOAA Fisheries Service candidate species.

Federal laws and regulations pertaining to wildlife include the following.

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

2.3.4.2 AFFECTED ENVIRONMENT

Prior to conducting fieldwork, H. T. Harvey & Associates biologists reviewed several sources for information on the potential for occurrence of special-status animals and for habitats potentially supporting such animals. Those sources included the CP-HPS Plan Final EIR (San Francisco Redevelopment Agency 2010); recent ecological studies prepared for the CP-HPS Plan (H. T. Harvey & Associates 2009a, 2009b); an earlier version of the Bayview Transportation Improvements NES (Jones and Stokes 2007); and CNDDDB (2011) data. A list of federally listed species, proposed and candidate species, and critical habitat was downloaded from the USFWS website (Appendix C). Collectively, these sources were used to determine which special-status animals had some potential to occur in the BTI Project area.

Typical animal species occurring within each of the four natural community/land use types that occur in or adjacent to the BTI Project site are described in Section 2.3.1.1.

The potential for special-status animal species to occur within the BTI Project site was evaluated based on the presence of suitable habitat and the species' distributions. Most of the regionally occurring special-status species were rejected for potential occurrence in the BTI Project site because the area lacks suitable habitat and/or is outside of the range of the species. Many of the special-status animals that occur in the BTI Project vicinity are associated with aquatic or wetland habitats. Because the BTI Project has been specifically designed to avoid any such habitats, these special-status animals are absent from the BTI Project site. Similarly, most other special-status animals occurring in the region have specific habitat requirements that are absent from the BTI Project site, and these species are thus also absent.

A few special-status species that occur in the region may occur on the BTI Project site, but only as uncommon to rare visitors, migrants, or transients, and are not expected to reside or breed on the site. The monarch butterfly (*Danaus plexippus*) may forage in the BTI Project vicinity occasionally, though high-quality habitat is absent, and no monarch butterfly roosts (which are the monarch-related resources of greatest concern) are known or expected to occur anywhere in the vicinity. Several bird species of special concern, including the yellow warbler (*Dendroica petechia*) and Vaux's swift (*Chaetura vauxi*), may forage in small numbers in or near the BTI Project site during migration, but neither species nests in the vicinity, and thus the BTI Project would not substantially affect these species' populations. The western red bat (*Lasiurus blossevillii*), also a California species of special concern, may occasionally roost in trees in the BTI Project area, but the species does not breed there. Owing to the absence of suitable habitat and

the heavily urbanized nature of the area, no other special-status animals are expected to.

2.3.4.3 ENVIRONMENTAL CONSEQUENCES

Two special-status bird species, the yellow warbler and Vaux's swift, may forage occasionally in the project area during migration but do not breed there. Vaux's swift forages aerially, and thus no habitat for this species would be lost, and no individuals are expected to roost in the actual areas where project improvements would occur. During migration, yellow warblers forage in a variety of trees and shrubs. Although the BTI Project would remove foraging habitat for this species, more trees would be planted within the BTI Project area as part of project improvements than would be removed, and thus, foraging habitat for yellow warblers would increase in the long term. Similarly, trees in which western red bats may occasionally roost would be removed by the BTI Project, but more would be planted, resulting in a net increase in potential roosting habitat. No individuals of these special-status animals would be killed or injured by project activities, as they are mobile enough to move out of the construction area when disturbed by heavy equipment or construction personnel. Thus, no substantial effects on special-status animals would result from the BTI Project.

2.3.4.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No substantial effects on special-status animal species would occur as a result of the BTI Project, and no injury or mortality of individual special-status animals would occur; therefore, no avoidance, minimization, and/or compensatory mitigation measures for effects on special-status animal species are required.

The following avoidance and minimization measures will be implemented to avoid effects on nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code.

1. Not more than 15 days prior to construction activities that occur between February 1 and August 31, surveys for nesting birds shall be conducted by a qualified biologist (one familiar with the breeding biology and nesting habits of birds that may breed in the Project vicinity) that is selected by the Project Proponent (the City and County of San Francisco). Surveys shall cover the entire area to be affected by construction and the area within a 250-foot buffer of construction or ground-disturbing activities. The results of the surveys, including survey dates, times, methods, species observed, and a map of any discovered nests, shall be submitted to the Project Proponent. If no active avian nests (i.e., nests with eggs or young) are identified on or within 250 feet of the limits of the disturbance area, no further mitigation is necessary. Phased construction work shall require additional surveys if vegetation or building removal has not occurred within 15 days of the initial survey or is planned for an area that was not previously surveyed. Alternatively, to avoid impacts, the Project Proponent shall begin construction after the previous breeding season for local birds has ended (after August 31) and before the next breeding season begins (before February 1).
2. If active nests (with eggs or young) of protected avian species are found within 250 feet of the proposed disturbance area, a minimum 250-foot no-disturbance buffer zone surrounding active raptor nests and a minimum 100-foot buffer zone surrounding nests of other special-status or protected avian species shall be established until the young have fledged. Project activities shall not occur within the

buffer as long as the nest is active. The size of the buffer area may be reduced if a qualified biologist familiar with the species' nesting biology (as approved by the Project Proponent) and the California Department of Fish and Wildlife (CDFW) determine it would not be likely to have adverse effects on the particular species. Alternatively, certain activities may occur within the aforementioned buffers, with CDFW concurrence, if a qualified biologist monitors the activity of nesting birds for signs of agitation while those activities are being performed. If the birds show signs of agitation suggesting that they could abandon the nest, activities would cease within the buffer area. No action other than avoidance shall be taken without CDFW consultation.

3. Completion of the nesting cycle (to determine when construction near the nest can commence) shall be determined by a qualified biologist experienced in identification and biology of the specific special-status or protected species.

2.3.5 THREATENED AND ENDANGERED SPECIES

This section describes the potential for the BTI Project to affect species protected by the ESA.

2.3.5.1 REGULATORY SETTING

The primary federal law protecting threatened and endangered species is the ESA: 16 USC, Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as Caltrans (as assigned by FHWA), are required to consult with the USFWS and NOAA Fisheries Service to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an Incidental Take statement. Section 3 of ESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.3.5.2 AFFECTED ENVIRONMENT

H. T. Harvey & Associates biologists reviewed several sources for information on the potential for occurrence of federally listed, proposed, and candidate plant and animal species. Those sources included the CP-HPS Final EIR (San Francisco Redevelopment Agency 2010); an earlier version of the Bayview Transportation Improvements NES (Jones and Stokes 2007); CNDDDB (2011) data; and a list of federally listed species, proposed and candidate species, and critical habitat downloaded from the USFWS website (Appendix C).

No federally listed, proposed, or candidate species, nor any designated critical habitat for federally listed species, are known or expected to occur in the BTI Project area due to the absence of suitable habitat for these species and the intense anthropogenic disturbance of the area owing to urbanization. There is a very low probability that the serpentine outcrops along Innes Avenue and Hunters Point Boulevard could support the federally endangered white-rayed pentachaeta, and the BTI Project would not affect these outcrops. Aquatic habitats of San Francisco Bay near the BTI Project site provide habitat for federally listed fish such as the southern green sturgeon (*Acipenser medirostris*) and Central California Coast steelhead (*Oncorhynchus mykiss*), but the BTI Project site does not include these aquatic habitats. No other federally listed species are known or expected to occur in the BTI Project area.

No designated critical habitat for federally listed species is located on the BTI Project site. Tidal aquatic habitats of San Francisco Bay nearby are designated as critical habitat for the southern green sturgeon and Central California Coast steelhead, but as the previous paragraph notes, these areas are outside the project limits.

Similarly, the Bay's aquatic habitats represent essential fish habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act, but such habitat is not located within the BTI Project area.

2.3.5.3 ENVIRONMENTAL CONSEQUENCES

No federally listed, candidate, or proposed species; designated habitat for such species; or essential fish habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act occur in the BTI Project area or in immediately adjacent areas that could be affected directly or indirectly by the BTI Project. Therefore, the BTI Project would have no effect on these resources.

2.3.5.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Because no federally listed, candidate, or proposed species; designated habitat for such species; or essential fish habitat regulated under the Magnuson-Stevens Fishery Conservation and Management Act would be affected by the BTI Project, no avoidance, minimization, and/or mitigation measures related to such resources are required.

2.3.6 INVASIVE SPECIES

This section discusses the potential for the BTI Project to result in adverse effects related to colonization by or spread of invasive species.

2.3.6.1 REGULATORY SETTING

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." FHWA guidance issued August 10, 1999 directs the use of the State's invasive species list, currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.3.6.2 AFFECTED ENVIRONMENT

Several non-native, invasive plant species are present within or adjacent to the BTI Project area (Table 2.3-2). These species mostly occur in developed and ornamental portions of the BTI Project area, although fennel occurs in the disturbed coastal scrub area that will be subject to grading.

Table 2.3-2. Invasive Plant Species Observed on the Project Site and their California Invasive Plant Council Ratings of Ecological Impact and Invasive Potential

Common Name	Scientific Name	Habitat Where the Species was Observed in the Project Area	Ecological Impact*	Invasive Potential*
Pampas grass	<i>Cortaderia selloana</i>	Near serpentine rock outcrops	A	A
English ivy	<i>Hedera helix</i>	Developed and ornamental	A	A
Fennel	<i>Foeniculum vulgare</i>	Near serpentine rock outcrops, Disturbed coastal scrub	A	B
Iceplant	<i>Carpobrotus edulis</i>	Developed and ornamental	A	B
Ripgut brome	<i>Bromus diandrus</i>	Disturbed coastal scrub	B	B
Tree-of-heaven	<i>Ailanthus altissima</i>	Developed and ornamental	B	B
Wild oats	<i>Avena fatua</i>	Disturbed coastal scrub	B	B
Velvet grass	<i>Holcus lanatus</i>	Willow scrub	B	B
Lollypop tree	<i>Myoporum laetum</i>	Disturbed coastal scrub, developed and ornamental	B	B
Pride of Madeira	<i>Echium candicans</i>	Developed and ornamental	C	B
* A=Severe; B=Moderate; C=Limited. These ratings were derived from the California Invasive Plant Council Website: http://www.cal-ipc.org/ip/inventory/weedlist.php				

2.3.6.3 ENVIRONMENTAL CONSEQUENCES

None of the species on the California list of noxious weeds is currently used by the Department for erosion control or landscaping in San Francisco. Nevertheless, there is some potential for the BTI Project to cause the spread of nonnative, invasive plant species that are already present in the project vicinity. Due to the highly disturbed/developed nature of the majority of the BTI Project area and its vicinity, such an effect would have little impact on existing natural communities, as most of the vicinity lacks sensitive habitats that would be degraded by such invasions. However, serpentine communities at the edge of, or immediately adjacent to, the BTI Project area along Innes Avenue and Hunters Point Boulevard are sensitive communities, and BTI Project activities could affect these native-dominated communities if they resulted in the colonization or spread of nonnative plants into the serpentine communities.

All of these invasive species are very difficult to eradicate. The removal of all parts of the plant before viable seed can develop, including roots and rhizomes, can help control infestations, although the removal of all plant material from the site is necessary to reduce the incidence of regrowth from rhizome, stolon, or stem fragments. In addition, follow-up removal of re-sprouts is essential to prevent re-infestation (DiTomaso and Healy 2007). The majority of nonnative, invasive plant species produce seeds that germinate readily following disturbance, and thus areas of temporary ground disturbance

associated with BTI Project activities could serve as areas promoting invasion by these nonnative species.

2.3.6.4 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The City will require its contractor(s) to employ the following Best Management Practices (BMPs) for weed control to avoid and minimize the spread of invasive plant species:

1. In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the FHWA, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, such as the portions of Innes Avenue and Hunters Point Boulevard adjacent to serpentine communities, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.
2. Prior to grading, infested areas will be cleared of vegetation and all vegetative material will be incinerated offsite or disposed of in a landfill, taking care to prevent any seed dispersal during the process.
3. Following Project implementation, native seed from a local source will be planted on all disturbed ground via hydroseed that will not be landscaped and maintained and native species will be used in landscaping to the extent practicable.
4. After Project implementation, the soil substrate within graded areas such as the disturbed coastal scrub that was affected during construction will be stabilized by native hydroseed, preventing the majority of nonnative, invasive plant species' seeds from germinating. In addition, noninvasive landscaping plantings will be established.

2.4 CUMULATIVE EFFECTS

2.4.1 REQUIREMENTS FOR CUMULATIVE EFFECT ANALYSIS

2.4.1.1 REGULATORY SETTING

Cumulative effects are those that result from past, present, and reasonably foreseeable future actions, combined with the potential effects of the proposed Project. A cumulative effects assessment looks at the collective effects posed by individual land use plans and projects. Cumulative effects can result from individually minor, but collectively significant effects taking place over a period of time.

Cumulative effects on resources in the Project area may result from the effects of the transportation project together with other past, present, and reasonably foreseeable projects such as residential, commercial, industrial, and other development, as well as from agricultural activities and the conversion to more intensive types of agricultural cultivation. Such land use activities may result in cumulative effects on a variety of natural resources such as species and their habitats, water resources, and air quality. Additionally, they can also contribute to cumulative effects on the urban environment such as changes in community character, traffic volume and patterns, increased noise, housing availability, and employment.

A definition of cumulative effects under the National Environmental Policy Act (NEPA) can be found in 40 CFR, Section 1508.7 of the Council on Environmental Quality (CEQ) Regulations.

2.4.2 APPROACH TO CUMULATIVE EFFECT ANALYSIS

This cumulative effect analysis focuses on those resources topics that would be affected by the BTI Project, and resources that are currently in poor or declining health or are at risk even if Project effects are relatively small. Resource areas that the BTI Project will have no direct or indirect effects on are not discussed further in this analysis.¹

The analysis accounts for other past, present, and reasonably foreseeable projects in the same geographic area as the BTI Project, as well as planned land uses and transportation and circulation projections identified in the *San Francisco General Plan* and policy documents. The analysis is largely based on information provided by the San Francisco Department of Public Works (SFDPW), San Francisco Municipal Transportation Agency (SFMTA), San Francisco County Transportation Authority (SFCTA), and San Francisco Redevelopment Agency (SFRA), the list of development and transportation projects considered in the Transportation Impact Study (TIS) report prepared for the BTI Project, and from input obtained from Caltrans.

¹ Per Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Minimization Measures*, Wild and Scenic Rivers, Farmlands/Timberlands, and Paleontology are resource area topics that were considered but were determined to have no adverse effects. Consequently, there is no further discussion regarding these issues in the document and they are not analyzed for cumulative effects.

Other possible projects, which may have been discussed in the press, that have not been approved or funded, and that are too speculative to assume for purposes of this analysis, have not been included and are not discussed further.

2.4.2.1 PAST, PRESENT, AND REASONABLY FORESEEABLE PROJECTS INCLUDED IN THE CUMULATIVE ANALYSIS

Table 2.4-1 provides a list of the projects considered in the cumulative analysis and a description of the size, proposed development/improvements proposed, and a summary of the cumulative effects on the BTI Project. Specific cumulative analysis discussion by environmental resource topic area is provided in Section 2.4.3, *Assessment of Cumulative Effects by Resource Area*.

2.4.3 ASSESSMENT OF CUMULATIVE EFFECTS BY RESOURCE AREA

2.4.3.1 RESOURCES THAT WOULD BE AFFECTED BY THE PROPOSED PROJECT

Following is a brief discussion of resource area topics on which implementation of the BTI Project could have a direct or indirect effect. Except where specifically stated otherwise, the geographic boundary for each resource area is the Southeast Community, as defined in this EA.

Land Use

As described in Section 2.1.1, *Land Use*, the BTI Project is not anticipated to result in conflicts with planned land uses detailed in applicable state, regional and local land use and transportation plans and programs for the area. The Project addresses the need for an improved access route between US-101 and I-280 and Candlestick Point and HPS, as well as multimodal access to the BTI Project area and the rest of San Francisco and the Bay Area region. Because the Project would not result in the displacement of existing land uses, would not result in the permanent loss of any park or recreation facilities, is primarily located in an area that is already built out/developed, and is consistent with redevelopment planning in the Southeast Community, the BTI Project is not anticipated to contribute to an adverse cumulative land use effect. Rather, the BTI Project would rehabilitate/reconfigure transportation infrastructure in areas of existing development and construct new transportation infrastructure in support of planned growth in the Candlestick Point and HPS area, consistent with land use planning for the vicinity, and therefore would contribute to a cumulative beneficial land use effect.

The BTI Project would improve roadway, bicycle, and pedestrian linkages, which would be a cumulative beneficial land use effect.

Growth

The Build Alternative is not anticipated to induce unplanned growth. The resource study area (RSA) for growth is the Southeast Community of San Francisco. The Project would not increase or affect freeway capacity. Past, present, and reasonably foreseeable projects in the RSA, and identified in Table 2.4-1, would directly result in growth through the development of housing, supporting retail, and commercial businesses. Future growth from each of the projects listed in Table 2.4-1 is planned and accounted for in the

existing zoning, and potential growth would not occur until those areas experienced redevelopment. Furthermore, physical constraints to growth include topography, varying elevations, existing infrastructure, and protected parkland, and any and all projects not included in the CP-HPS Plan would not be consistent with existing zoning or redevelopment planning. By providing improved transportation infrastructure within a portion of the RSA, the BTI Project supports redevelopment, and could affect the timing of growth within the RSA. However, the Build Alternative would not affect the location or amount of the growth because development in the RSA is prescribed by adopted redevelopment plans. Any growth that would occur as a result of the BTI Project has been accounted for in adopted redevelopment plans and would be considered a beneficial effect.

Community Impacts

As described in Section 2.1.3, *Community Impacts*, the Build Alternative has been designed to avoid any residential displacement, ensuring existing residential areas remain intact. The local community would benefit from the implementation of the Build Alternative as new key linkages would be created extending the existing neighborhood street grid (increasing accessibility and mobility in the RSA, in particular to access new and existing waterfront open space) to planned areas of redevelopment.

The Community Impacts RSA includes eleven census tracts (230.01, 230.03, 231.02, 231.03, 232, 233, 234, 610, 612, 9806, and 9809) that make up the 4.8-square-mile area generally bounded by Cesar Chavez Street, US 101, San Francisco Bay, and the San Francisco/San Mateo County line.

As described in Section 2.1.3, *Community Impacts*, the current community conditions in the RSA include strong community cohesion and distinct residential neighborhoods. The community has a high home ownership rate (over 45%), coupled with strong community traditions, a commercial identity and gateway (Third Street), central gathering places, and identifiable neighborhoods.

The BTI Project would not result in the displacement of any private properties or residential or commercial lots, although eight partial acquisitions (refer to Section 2.1.3, *Community Impacts*) would be required. Potential fiscal effects of public land acquisitions are not anticipated to result in substantial effects and would be offset by the new employment, retail, and residential uses expected to result from implementation of projects listed in Table 2.4-1. Construction and operation effects of the BTI Project are limited to resources that are specifically located within or immediately adjacent to the Build Alternative ROW. These site- and project-specific effects include direct conflicts with nonresidential land uses within the proposed ROW; localized construction-related effects (e.g., utilities/emergency services [service interruption], traffic and transportation/pedestrian and bicycle facilities [access, congestion], air quality, and noise).

There are numerous past, present, and reasonably foreseeable future actions (refer to Table 2.4-1) in the RSA that have direct and indirect impacts to the community that, when combined, would have a beneficial cumulative impact on the community. These projects have and will create new employment, retail, and residential uses adjacent to (not in lieu of) existing uses, but are not anticipated to alter the fundamental character of the area (in part because of the strong community cohesion and distinct residential neighborhoods) in a way that is inconsistent with redevelopment planning. The CP-HPS

Plan and Executive Park projects will both construct new residential and retail buildings providing new job and housing opportunities throughout the community.

The BTI Project's contribution to cumulative community impacts (with respect to community cohesion, tax revenue, and construction-related effects) is anticipated to be minor. Implementation of proposed avoidance, minimization, and/or mitigation measures for construction activities would offset any effects of the Project. Overall, the BTI Project would contribute to a beneficial cumulative effect to the community (community cohesion and tax revenue).

Table 2.4-1. Past, Present, and Reasonably Foreseeable Projects

Project Name	Acreage/Density Information	Proposed Uses
Development Projects¹		
India Basin Shoreline Area C (proposed), City and County of San Francisco	76 acres. 1,200 residential units, 1,500 thousand square feet (ksf) retail/office	Hunters Point Hill along India Basin Cove. Mixed use residential, commercial, office development.
Visitation Valley/Schlage Lock (VV/SL) Redevelopment Program, City and County of San Francisco.	20 acres. 1,600 residential units, 200 ksf retail/community	Adjacent to Bayside Boulevard and Leland Avenue. Mixed-use residential, retail/commercial, community, open space development.
Cow Palace (proposed), Daly City.	100 acres. 1,700 residential units, 550 ksf retail/R&D	Daly City/Cow Palace site. Mixed-use residential and retail/R&D.
Brisbane Baylands (proposed), City of Brisbane.	684 acres. 8,500 ksf of retail/office, hotel/warehousing/distribution	Brisbane Lagoon, west of US 101 and south of Beatty Road. Mixed-use commercial, retail, office, residential, hotel, and light industrial.
Executive Park, City and County of San Francisco.	71 acres. 3,400 residential units, 90 ksf retail, reduction of 320 ksf office.	Adjacent to Harney Way, east of US 101. Mixed-use residential and commercial development. Includes local roadway improvements, such as signalization of Harney Way/Executive Park Boulevard East, signalization and reconfiguration of Harney Way/Alana Way/Thomas Mellon Drive, widening of Harney Way, signalization of Executive Park Boulevard West/Alana Way and restriping of the southbound lane, widening of Alana Way, signalization of Alana Way/Beatty Road.
Hunters View, City and County of San Francisco.	22 acres. 800 residential units. 30 ksf retail/community.	Located south of Evans Avenue and west of Hunters Point Boulevard. Mixed-use residential and retail/community development.
CP-HPS Plan (Candlestick Point - Hunters Point Shipyard Phase II Plan), City and County of San Francisco.	702 acres. 12,100 residential units, 3,700 ksf retail office/R&D/commercial.	India Basin/HPS and Candlestick Point area. Mixed-use residential, retail/office/R&D, hotel, artist live/work space, community, recreation, and parklands. Includes transportation/transit improvements to internal street network/grid in HPS and in Candlestick Point.
	Transfer of 23 net acres adjacent to CPSRA's border to the City of San Francisco	Development activities and management objectives at the Candlestick Point State Recreation Area (CPSRA or SRA)

Table 2.4-1. Past, Present, and Reasonably Foreseeable Projects

Project Name	Acreage/Density Information	Proposed Uses
Transportation Projects		
Bayshore Intermodal Station, City and County of San Francisco.	n/a	Creation of a high-visibility community-focused station area with intermodal connections to Caltrain, light rail, and buses.
Bi-County Transportation Improvements (City and County of San Francisco and San Mateo County).	n/a	Several transportation improvements in the Project area (and in San Mateo County) have being studied to address land use growth. The study includes the following Project area (and areas immediately adjacent west of US 101) improvement projects: US 101 Interchange, Geneva Avenue Extension, Harney Way Re-design, Yosemite Slough Bridge, new Oakdale Caltrain Station ² , Harney bus rapid transit (BRT) Facility, Geneva Avenue TPS Treatments/BRT Facility, T-Third Segment "S" Extension, and Palou TPS Street Treatments
Caltrain Electrification	n/a	Electrification of the Caltrain line from San Francisco to San Jose. This project would convert existing commuter rail using diesel locomotives to electric power. Electrification provides train operation benefits which allow for more frequent train service in the Caltrain corridor.
Blue Greenway (San Francisco PORT)	n/a	San Francisco PORT project, includes a 13-mile trail corridor (from China Basin Channel to the San Francisco County Line) and linking open space areas, development recreation/green infrastructure and green corridors, provides public access through implementation of the San Francisco Bay Trail, the San Francisco Bay Area Water Trail, installation of public art/interpretive elements, support stewardship, advocate for waterfront access.
Source: Fehr & Peers 2012 and San Francisco County Transportation Authority 2012. The projects included in Table 8 correspond to the projects described in the TIS and included in Table 2.1.1-1.		
1. 833-989 Jamestown is a proposed residential development on Jamestown Avenue. Based on the scope and proximity of this project to the BTI Project, no cumulative effects are anticipated.		
2. The Quint Street Bridge Replacement is within the study area for the Oakdale Station Study. Based on the scope and proximity of this project to the BTI Project, no cumulative effects are anticipated.		

Utilities/Emergency Services

As discussed in Section 2.1.4 *Utilities/Emergency Services*, the BTI Project would have direct effects on utilities/emergency services as a result of construction. Potential effects include temporary interruptions of service (to utilities) and detours/partial road closures for emergency service providers. Implementation of proposed avoidance, minimization, and/or mitigation measures for construction activities would offset any effects of the Project. Construction activities would be coordinated with utility/service providers to provide uninterrupted service and adequate emergency access. Past, present, and reasonably foreseeable projects would also have to coordinate with utility providers and emergency service providers. Therefore, the BTI Project is not anticipated to make a considerable contribution to cumulative effects on utilities and emergency services. BTI Project improvements to roadways and creation of key linkages to redevelopment areas would be a beneficial cumulative effect for emergency service providers.

Traffic and Transportation/Pedestrian and Bicycle Facilities

Section 2.1.5 *Traffic and Transportation/Pedestrian and Bicycle Facilities* provides detailed description of the potential cumulative effects of the BTI Project in combination with other past, present, and reasonably foreseeable projects. Buildout of the BTI Project would generally improve traffic and transportation/pedestrian and bicycle facilities in comparison to the future No Build conditions.

Cumulative effects related to construction would be minor, and would be offset by implementation of avoidance, minimization, and/or mitigation measures found in Section 2.1.5.4.

Visual/Aesthetics

As described in Section 2.1.6, *Visual/Aesthetics*, the BTI Project would have a direct effect on the visual character of the RSA, specifically as it relates to visual resource changes and visual changes to viewpoints and effects on viewer groups. The visual resource change would include the rehabilitation and reconfiguration of existing ROWs including features such as bicycle lanes, sidewalks, medians and retaining walls (e.g., Harney Way), construction of new ROWs including features such as bicycle lanes, sidewalks, medians, and other streetscape elements (e.g., Arelious Walker Extension), and the removal of 255 street trees in the Project area (refer to Section 2.3, *Biological Environment*).

The Visual/Aesthetics RSA includes the BTI Project viewshed, which are the areas that could potentially have views of the BTI Project features and the areas from which viewers using the BTI Project roadways could see as they travel through the landscape.

As described in Section 2.1.6, *Visual/Aesthetics*, the current visual/aesthetic conditions in areas of existing roadway are highly urbanized and paved, and serve a mix of residential and industrial uses. The vast majority of the BTI Project site is already developed. The visual quality of the developed areas (residential and industrial) of the BTI Project is considered *low*; related to lack of vegetation, monotonous environment, and presence of debris, such as litter, illegal dumping, and industrial stockpiles and wastes.

The public recreation and shoreline areas are considered to have *moderate* visual quality; related to vegetation, water components, visual continuity, and panoramic views of the San Francisco Bay, the East Bay Hills, and San Bruno Mountain.

BTI Project improvements in the developed areas include TPS streetscape improvements, including consistent landscaping, lighting, and signage. In these areas any project improvements would be integrated into existing development. Cumulatively, the landscaping would be a beneficial visual/aesthetic effect.

In the public recreation and shoreline areas, the cumulative effects of foreseeable future actions is redevelopment of underutilized areas such as the stadium site, HPS, and the redevelopment/reconfiguration of public shoreline open space. The Project's contribution to the visual changes in this area will be minor in comparison to the redevelopment projects. The proposed streetscape improvements, including two retaining walls, would be small-scale compare to redevelopment and would be consistent with aesthetic visions for the shoreline area and would contribute to a beneficial effect.

Cultural Resources

The BTI Project would not affect historic architectural resources in the area of potential effect (APE); however, there is potential to effect archeological resources. The Project, in combination with past, present, and reasonably foreseeable projects, has potential for disturbance or destruction of known or unknown archeological resources. Implementation of avoidance, minimization and/or mitigation measures described in Section 2.1.7, *Cultural Resources*, would offset the Project's individual effects on buried archeological resources. Other future development projects within the larger Project area may result in similar effects on buried archeological resources and would also have to adhere to City/Section 106 requirements related to cultural resources. Thus, implementation of cultural resources avoidance, minimization, and/or mitigation measures would effectively prevent a future cumulative loss. As such, the BTI Project is not anticipated to make a considerable contribution to a cumulative effect on cultural resources.

Hydrology and Floodplain/Water Quality and Storm Water Runoff

The BTI Project area is a built-up environment developed with existing residential, commercial, and industrial uses. The BTI Project would rehabilitate and reconfigure existing ROWs and would introduce limited areas of new impervious surfaces that would result in an incremental reduction in the amount of natural soil surface available for infiltration of rainfall and runoff, potentially generating additional runoff during storm events. Additional runoff can contribute to the flood potential of natural stream channels, and accelerate soil erosion and stream channel scour. Additionally, the Project could contribute to a cumulative increase in stormwater contaminants caused by the incremental increase in roadway surface area, increased transport of pollutants to waterways, and increased use of the roadway over time as future development occurs in the project corridor. As development in the surrounding urban areas and the use of the proposed roadway improvements increase, greater quantities of contaminants could be deposited on the road surfaces, contributing to a cumulative increase in storm water contaminant loading. Implementation of avoidance, minimization, and/or mitigation measures described in Section 2.2.1 *Hydrology and Floodplains*, and 2.2.2 *Water Quality and Storm Water Runoff* would offset the Project's effects on hydrology and floodplains and water quality and storm water runoff. Therefore, the Project would not

make a considerable contribution to cumulative increases in runoff volumes, storm water contaminants, or flooding.

Geology/Soils/Seismic/Topography

As described in Section 2.2.3 *Geology/Soils/Seismic/Topography*, it is considered geotechnically feasible to design and construct the Build Alternative. The Project area requires particular attention to potential for seismic hazards, including strong groundshaking. No known active faults traverse the Project area. However, the San Andreas Fault has the potential to create an earthquake with an estimated maximum moment magnitude of 7.9 (Richter scale). Hazards associated with mudslides, rockslides, or landslides are not anticipated. With the incorporation of design considerations presented there would be no substantial Project effects on geology, soils, seismic, or topography. Other future development projects within the larger Project area may result in similar geotechnical/seismic effects and would also have to adhere to state and City geotechnical/seismic requirements. Thus, implementation of geology/soils/seismic/topography avoidance, minimization and/or mitigation measures would prevent a future cumulative effect. As such, the BTI Project is not anticipated to make a considerable contribution to a cumulative effect on geology/soils/seismic/topography.

Hazardous Waste/Materials

As discussed in Section 2.2.4, *Hazardous Waste/Materials*, because of historical land uses, substantial amounts of hazardous materials, including radiological materials, exist within the Project area. Construction of the Build Alternative would involve excavation of hazardous materials for new infrastructure. The quantity of excavated soils containing hazardous waste provides a benchmark of potential exposure to hazardous materials during Project construction. Other projects that require excavation in this area have already or could potentially encounter hazardous materials. Treatment and handling of hazardous materials are highly regulated, and project-specific measures would be employed for to minimize the risk of exposure to hazardous materials during construction activities. Implementation of hazardous waste/materials avoidance, minimization, and/or mitigation measures would reduce potential effects from cumulative hazardous waste/materials effects. Other future development projects within the larger Project area would also have to adhere to City/SFDPH requirements related to hazardous waste/materials. Therefore, the Project would not make a considerable contribution to cumulative effects on hazardous materials. Cumulative conditions in the Project area would be beneficially affected as a result of ongoing remediation and outreach activities.

Air Quality

As described in Section 2.2.5, *Air Quality*, construction period activities associated with the Project would include demolition (excavation, grading, hauling), actual construction, changes to utilities, striping/installation of signals, and landscaping. Implementation of air quality avoidance, minimization, and/or mitigation measures would offset the Project's effects on air quality. Therefore, the Project is not anticipated to make a considerable contribution to cumulative air quality effects.

Biological Environment

The BTI Project is in a primarily developed area but could contribute to loss of habitat and special-status species. However, with implementation of avoidance, minimization, and/or mitigation measures listed in Section 2.3, *Biological Environment*, effects of the

BTI Project would be offset. Therefore, the Project is not anticipated to make a considerable contribution to cumulative biological resources effects. The BTI Project includes an overall increase in the number of trees in the area, promoting the health and expansion of biological resources in the Southeast community, which is a beneficial effect.

2.4.3.2 RESOURCES THAT WOULD BE ADVERSELY AFFECTED BY THE PROPOSED PROJECT

Noise

The RSA for noise includes the BTI Project area and the 36 measurement locations identified in the Noise Study Report prepared for the Project (Atkins 2012). As described in Section 2.2.6 *Noise* (specifically refer to *Future Noise Environment and Effects* under 2.2.6.4 *Environmental Consequences*), although there are locations where noise levels are anticipated to increase by 12db over existing conditions with past, present, and reasonably foreseeable plans, the comparison of future (2035) noise levels without the BTI Project to with the BTI Project (refer to Table 2.2.6-6) shows that noise levels would be similar. Of the 11 receptor locations modeled where the effect was determined to approach or exceed the Noise Abatement Criteria, seven predicted noise levels were the same under both 2035 cumulative scenarios (with and without the Project), and two were higher (less than 3db difference) in the Build scenario (with the Project). Two were higher under the No Build scenario, but also with less than 3db difference. Increases in noise levels would result from an increase in background traffic levels associated with past, present, and reasonably foreseeable projects (refer to Table 2.4-1), however, the BTI Project's contribution to cumulative noise effects is considered low.

The BTI Project would result in construction noise effects. As shown in Table 2.2.6-7, construction activities associated with the BTI Project are anticipated to range between 70 to 90 dB at a distance of 50 feet. These effects would be offset by implementation of avoidance, minimization, and abatement measures identified in Section 2.2.6.5, which would include the rescheduling of construction activities to reduce potential noise effects on noise sensitive receptors. Other past, present, and reasonably foreseeable development projects within the larger Project area (refer to Table 2.4-1) could occur on similar schedules in the same or adjacent areas. However, they would have to comply with City noise requirements, including rescheduling activities as determined appropriate by the City. Construction activities of the BTI Project and future development projects would be coordinated with the City and scheduled to minimize potential cumulative noise effects. Therefore, although there would be a cumulative impact to noise in the RSA from past, present, and reasonably foreseeable projects, the BTI Project is not anticipated to make a considerable contribution as a result of construction.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential effects and mitigation measures, and related environmental requirements. Agency consultation and public participation for the BTI Project has been accomplished through a variety of formal and informal methods, including: project development team meetings, formal letter requests for information and coordination, interagency coordination meetings, meetings with public and resource agency staff, community advisory committee meetings, distribution of flyers and public notices during the studies, and public meetings. This chapter summarizes the results of the efforts by the City and Caltrans to fully identify, address, and resolve issues related to the BTI Project through early and continuing coordination. Between 2003 and 2010, the scope of the Project was revised to focus on vehicular traffic (instead of trucks), transit/multi-modal, and pedestrian/bicycle facilities, and the BTI Project purpose and need were modified accordingly. However, the Project's geographic boundaries, and affected parties have remained the same.

3.1 EARLY PUBLIC AND AGENCY CONSULTATION (SCOPING) PROCESS

The scoping process is a required feature of an EIS environmental review process. It is not required for preparation of an EA. It allows agencies and other interested parties to provide input on the focus of the project and study, including proposed alternatives, topics being evaluated, and potential effects and mitigation measures being considered. Early public and agency consultation on earlier iterations of the BTI Project were performed through distribution of a Notice of Preparation (NOP)/Notice of Intent (NOI), stakeholder meetings/interviews, scoping meetings, newspaper notices and mailings, solicitation of written comments, and Citizens Advisory Committee (CAC) meetings.¹

3.1.1 NOTICE OF PREPARATION/NOTICE OF INTENT

On June 9, 2004, an NOP issued to prepare an EIR was sent to all appropriate local, state, and federal agencies and other interested parties. Appropriate agencies were those that would potentially provide a project permit or approval, or that had jurisdictional responsibility for areas or resources that might be affected by the BTI Project.

In July 2010, the Candlestick Point-Hunters Point Shipyard Phase II Redevelopment Project (CP-HPS Plan) Environmental Impact Report (EIR) was certified by the City Board of Supervisors. The EIR includes analysis for BTI Project components. No further California Environmental Quality Act (CEQA) documentation for the BTI Project is anticipated.

In May 2004, the Federal Highway Administration (FHWA) published an NOI in the *Federal Register* to advise interested agencies and the public that an EIS would be

¹ The *Bayview Transportation Improvements Final Summary Scoping Report* provides detailed information on the public meetings conducted for the earlier iteration of the BTI Project. This document is available for review at the City and County of San Francisco Department of Public Works, 30 Van Ness Avenue, 5th Floor, San Francisco, CA 94102.

prepared. This NOI was later rescinded in August 2011, to account for the change in the scope of the Project and context of land use planning in the BTI Project area. The notice to rescind the NOI also indicated that “given the changes in the scope of the proposed action, Caltrans intends to prepare an Environmental Assessment” (a change from the EIS originally described in the NOI).

3.1.2 STAKEHOLDER MEETINGS/INTERVIEWS

As part of the initial public outreach effort on earlier iterations of the BTI Project, and before any public information meetings, the City conducted 39 stakeholder meetings with local community groups, businesses, environmentalists, and others in the BTI Project area. The stakeholder meetings were held during regularly scheduled community meetings or through individual appointments. BTI Project team representatives conducted presentations on the scoping process and gave an overview of the study alternatives. Participants were given the opportunity to voice concerns. The goal was to identify and discuss concerns, effects, questions and interest regarding the BTI Project with local community leaders and representatives.

A comprehensive list of potential stakeholders was developed to reflect the communities and special issues within the BTI Project area.

After the scoping process, further outreach was conducted to keep the public informed. This included 95 additional meetings with stakeholders and community groups. Meetings were held during regularly scheduled community meetings or through individual appointments. Various meeting locations were selected throughout the Bayview Hunters Point area to encourage attendance.

3.1.3 SCOPING MEETINGS

Two combined agency/public scoping meetings were held at the Bayview Opera House in San Francisco on July 8, 2004, at 1:00 p.m. and 7:00 p.m. The scoping meetings were organized in an open house format and provided a forum for attendees to learn about the earlier iterations of the BTI Project, environmental process, scoping, and initial BTI Project alternatives. Approximately 30 community members attended each meeting, including residents and business owners within the Bayview community.

Attendees were introduced to the earlier iteration of the BTI Project through a presentation, which discussed the process, overview, and alternatives developed to date. Following the presentation, the attendees were able to review informational display boards posted around the room and to ask questions and provide comments to BTI Project staff on a one-on-one basis. Attendees were provided the opportunity to verbally state or write comments on a scoping comment sheet provided at the meeting. Written and verbal comments were accepted at the meetings and also via mail, email, phone, and fax until July 23, 2004. Scoping Meeting materials are available in Appendix B of the CIA.

3.1.4 NEWSPAPER NOTICES AND MAILINGS

On June 2, 2004, an NOP was published in the public notice sections of *The Independent*, *San Francisco Bay View*, *Sun Reporter*, *Asian Week*, and *El Latino* newspapers, and was mailed to local residents, business, and government officials to describe the earlier iteration of the BTI Project and advise interested agencies and the public that an environmental document would be prepared. On the same date, FHWA

also published a NOI in the *Federal Register* to advise interested agencies and the public that an EIS would be prepared. As described in 3.1.1, *Notice of Preparation/Notice of Intent*, this NOI was rescinded in August 2011 based on the change in the BTI Project scope.

The scoping process included two public scoping meetings. In addition, an extensive mailing list was compiled of nearby property owners, businesses, elected officials, City staff, neighborhood groups, and special-interest organizations. Groups and individuals on this list received meeting notices, BTI Project fact sheets, and updates. Mailings displayed instructions on how to receive information about the BTI Project in foreign languages, including Spanish, Tagalog, and Mandarin (Chinese).

Notice of the public meeting was also published on the SFDPW website and the PAC website, and was distributed to individuals on the City Police Department's electronic mailing list service.

3.1.5 COMMENTS RECEIVED

Written comments were accepted throughout the scoping period between June 2 and July 23, 2004. A total of 115 persons provided comments, including individuals and representatives of organizations and agencies. In addition, a number of telephone conversations, email communications, and meetings were held with interested parties. For more detailed information on specific scoping meetings, attendees, or commenters, please refer to the *Bayview Transportation Improvements Project Final Summary Scoping Report*. All comments received were carefully considered in refining the approach and environmental effect issues and studies associated with the BTI Project.

3.1.6 AD HOC COMMUNITY ADVISORY COMMITTEE MEETINGS

The CAC was formed in March 2004 to provide an additional link to the community and a forum for continued public comment. From its commencement through July 2007, the CAC met 18 times. Subsequent to 2007, community updates were provided to the community organizations from which the ad hoc CAC members were drawn. These organizations were the Bayview Hunters Point Project Area Committee (BVHP PAC) and the HPS Citizens Advisory Committee (HPS CAC). Presentations were made to these committees in summer 2011 to seek input on the Proposed Project assessed in this EA.

3.2 CONSULTATION AND COORDINATION WITH PUBLIC AGENCIES

3.2.1 CONSULTATIONS UNDER ENDANGERED SPECIES ACTS

Consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) under Section 7 of the federal Endangered Species Act (ESA) and with the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA) would be required if the BTI Project has effects on threatened, endangered, or candidate biological species. As described in Section 2.3, *Biological Environment*, no effects on threatened, endangered, or candidate biological species are anticipated, and preparation of a biological assessment (BA) was not

required. No consultation with USFWS, NMFS, or CDFW for the BTI Project has been conducted in the preparation of the EA.

3.2.2 CONSULTATIONS PURSUANT TO SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

3.2.2.1 HISTORIC PROPERTIES COORDINATION

A historic property survey report (HPSR), archaeological survey report (ASR), and historical resources evaluation report (HRER) report were prepared and submitted to the SHPO in November 2007. Subsequently, an Addendum HPSR, Addendum ASR, and Addendum HRER were prepared in 2012.

Two previously unevaluated properties, 900 Palou Avenue and 3003 Third Street, were identified in the revised Architectural APE and addressed in the Addendum HRER. The identified and evaluated properties each include an industrial building constructed over 50 years ago. On March 5, 2012 Caltrans wrote to the SHPO requesting concurrence in accordance with Stipulation VIII.C.5 of the project's Programmatic Agreement (PA) that the two additional properties are not eligible to the NRHP nor considered historic resources for purposes of CEQA. The SHPO did not respond to the eligibility determinations and concurrence is assumed under provisions of the PA between Caltrans and SHPO regarding Section 106 compliance. The HRER prepared for the initial Project and approved by Caltrans included railroad features and a bridge. The only other buildings, structures, and site features within the revised Architectural APE that are over 50 years old are concentrated in the Hunters Point Shipyard (HPS), parcel 4591A/079, and include thirty five (35) buildings. The revised Architectural APE, however, does not include the entire HPS parcel nor does it include any portion of the Hunters Point Commercial Drydock and Shipyard Historic District within the HPS parcel. Furthermore, all of the buildings, structures and objects within the HPS parcel and encompassed by the Architectural APE have been previously evaluated and determined by the SHPO to not be eligible for inclusion individually or as a district to the NRHP or the CRHR. The HPS was evaluated by PBS&J in 2006 and by Circa Historic Properties Development in 2009.²

A PA between the SHPO and Caltrans was developed in 2008 as the guiding document for all cultural resources compliance procedures during the course of the BTI Project (refer to 2.1.7 *Cultural Resources*). As part of the PA, an Historic Properties Treatment Plan (HPTP) was developed. Per this PA and the HPTP, the next step in the identification process would be an extended phase one (XPI) proposal, which would culminate in the eventual XPI report. Based on the findings of this report, a determination of the potential for the BTI Project work to affect cultural resources would be reached. If no resources are found within the archaeological APE, the Section 106 process would be complete, pending approval of the SHPO. The purpose of the HPTP is to establish protocols for the evaluation and treatment of prehistoric and/or historical archaeological resources consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

² San Francisco Redevelopment Agency and the City and County of San Francisco Planning Department, *Candlestick Point-Hunters Point Shipyard Phase II: Section III.J Cultural Resources and Paleontological Resources*, November 2009.

3.2.2.2 TRIBAL COORDINATION

The Native American Heritage Commission (NAHC) was contacted on August 3, 2005 for a search of its sacred lands files and for a list of local Native American organizations and individuals. On August 9, 2005, the NAHC indicated that no sacred land sites were on file for the earlier iteration of the BTI Project area and provided a list of interested parties. On August 22, 2005, letters were sent to all the organizations and individuals named on the NAHC list. On June 15, 2006, a letter was received from the Lytton Band of Pomo Indians requesting that the tribe be kept informed regarding the proposed BTI Project. No other correspondence has been received. A follow-up letter was sent to all the organizations and individuals named on the NAHC list, as well as the Lytton Band of Pomo Indians, on May 28, 2008. This follow-up letter updated the groups on the progress of the BTI Project and inquired about whether they had any information regarding cultural resources that may exist in or near the archaeological APE. No responses to the follow-up letter have been received. The NAHC is included on the distribution list for this document.

3.2.3 COORDINATION UNDER SECTION 4(F) OF THE U.S. DEPARTMENT OF TRANSPORTATION ACT OF 1966

Section 4(f) requires coordination with the agencies that have jurisdiction over the resources eligible for protection under Section 4(f). Before making Section 4(f) approvals, the Section 4(f) evaluation must be provided for comment and coordination to the officials with jurisdiction over the Section 4(f) resource. Refer to Appendix A of this document for description of resources evaluated relative to the requirements of Section 4(f).

As described in Appendix A, Section 4(f) resources subject to consideration include publicly owned lands consisting of a public park/recreation area; public wildlife and waterfowl refuges of national, state, or local significance; or historic sites of national, state, or local significance whether publicly or privately owned. The Section 4(f) resources in the vicinity only include publicly owned park/recreation areas. There are no wildlife or waterfowl refuges, or significant historical sites located in the proposed BTI Project footprint. The BTI Project is pursuing a *de minimis* (23 CFR 774.15) determination for impacts on publicly owned park/recreation areas and a request for comment on this determination shall be included in public noticing to ensure the opportunity for review and comment on the effects of the BTI Project on the identified Section 4(f) resource.

A discussion of the *de minimis* findings is also summarized in Section 2.1.1.4, *Parks and Recreational Facilities*.

3.3 AGENCIES CONSULTED

The following agencies were consulted as part of the initial public and agency consultation process (for earlier iterations of the BTI Project, predating 2009). They will each receive notice of the availability of this environmental document (see Chapter 5, *Distribution List*).

3.3.1 FEDERAL AGENCIES

- Federal Emergency Management Agency
- National Marine Fisheries Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- U.S. Coast Guard
- U.S. Department of Commerce
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of the Interior
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- U.S. Navy
- U.S. Department of Transportation

3.3.2 STATE AGENCIES

- California Air Resources Board
- California Department of Conservation
- California Department of Fish and Wildlife
- California Department of Health Services/Public Health
- California Department of Housing and Community Development
- California Department of Parks and Recreation
- California Department of Water Resources
- California Department of Transportation
- California Energy Commission
- California Environmental Protection Agency
- California Highway Patrol
- California Public Utilities Commission
- CalRecycle
- Native American Heritage Commission
- Governor's Office of Planning and Research (OPR)
- San Francisco Bay Regional Water Quality Control Board
- State Office of Historic Preservation
- State Lands Commission

- State Resources Agency
- State Water Resources Control Board

3.3.3 REGIONAL AGENCIES

- Association of Bay Area Governments
- Bay Area Air Quality Management District
- Bay Conservation and Development Commission
- Caltrain
- Metropolitan Transportation Commission

3.3.4 CITY AND COUNTY OF SAN FRANCISCO

- Mayor's Office of Community Investment
- Mayor's Office of Economic and Workforce Development
- Municipal Transportation Authority
- Office of Economic and Workforce Development
- Port of San Francisco
- Public Utilities Commission
- Recreation and Park Department
- Redevelopment Agency
- San Francisco County Transportation Authority
- San Francisco Department of the Environment
- San Francisco Department of Public Health
- San Francisco Department of Public Works
- San Francisco Housing Authority
- San Francisco Planning Department
- San Francisco Unified School District

3.4 OTHER INTERESTED PARTIES AND STAKEHOLDERS

- Alice Griffith Tenants Association
- All Islanders Gathered as 1
- Arriba Juntos
- San Francisco Bay Trail Project (administered by the ABAG)
- Bayview Farmers Market
- Bayview Hill Homeowners Association
- Bayview Hunters Point Community Advocates

- Bayview Hunters Point Project Area Committee
- Bayview Merchants Association
- Bayview Missionary Baptist Church
- Bayview Opera House
- Bayview Public Schools
- Bridge Housing
- California State Parks Foundation
- Candlestick Point/Bayview Heights Neighborhood Committee
- Chinese for Affirmative Action
- Chinese Newcomer Services Center
- City Build/One Stop
- City of Brisbane
- Community First Coalition
- Environmental Justice Advocacy
- Faith Based Coalition
- Golden Gate Recycling and Disposal Company
- Health & Environment Resource Center
- Hunters Point Shipyard Citizens Advisory Committee
- Hunters View Housing Development
- India Basin Neighborhood Association
- Keith/Revere Homeowners Association
- Literacy 4 Environmental Justice
- Lennar Corporation
- McFarlane Partners
- Mission Education Centers
- Mission Education Projects
- Network for Elders
- Normancy Associates
- Our Lady of Lourdes Church
- Potrero Hill Tenants Association
- Prescreening workshop attendees
- Providence Baptist Church
- Residents of Southeast Sector
- Rotary Club of San Francisco Bayview
- Samoan Community

- Samoan Congregational Church
- San Francisco 49ers
- San Francisco Housing Authority
- San Francisco Housing Development Corporation
- San Francisco Police Department – Bayview Police Station
- San Francisco Produce Market
- Southeast Community Facility Commission
- *Sun Reporter*
- Sunset Scavenger Company
- True Hope Church of God in Christ
- Unity Peace and Freedom, Inc.
- Universal Paragon Corporation
- Visitation Valley Community Center and Parents Conference
- Windows on the Shipyard
- The Yerby Company

3.5 PUBLIC REVIEW OF THIS ENVIRONMENTAL DOCUMENT

Copies of this EA will be distributed as indicated in Chapter 5, *Distribution List*. The document will also be made available for review at the Bayview/Anna E. Waden Branch Library, San Francisco Main Library, Community Window on HPS, and the Caltrans District 4 offices in Oakland, as well as on Caltrans and City websites. This document will circulate for 30 days, during which time a public hearing will be held. Notice of the availability of this EA and the date, place, and time of the public hearing will be provided to the public through print ads published in local newspapers and by direct mailings to all property owners along the alternative routes. All written comments received during the comment period will be responded to in writing, either by modifying the BTI Project, modifying or supplementing the analysis presented herein, making factual corrections, or explaining why the comments do not warrant modifications to the document or BTI Project.

3.6 ONGOING PUBLIC INVOLVEMENT

3.6.1 PROJECT NEWSLETTER

The BTI Project Update newsletter was published in June 2004, June 2005, January 2006, and July 2007. The newsletter provided updated information on the BTI Project status, outreach activities, key issues and studies, schedule, and milestones. The newsletter was distributed to the BTI Project mailing list and at community meetings, and was posted on the BTI Project website.

3.6.2 PROJECT WEBSITE

The BTI Project website was available from 2004 to 2011 at the following URL: www.bayviewtrans.org. The website offered updated information and graphics on the Project purpose and need, alternatives, ongoing studies, emerging issues, and schedule. Information on upcoming BTI Project events, such as community information meetings, CAC meetings, or the public hearing, was posted to the website. Members of the community also used the website to contact the BTI Project team at any time with issues or concerns about the BTI Project.

Chapter 4 List of Preparers

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Appendix A Section 4(f)

Appendix A. Section 4(f)

A. Section 4(f) *De Minimis* Determination

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This revision provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete. FHWA’s final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the Department pursuant to 23 USC 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Description of Section 4(f) Resource

Candlestick Point State Recreation Area (CPSRA)

The CPSRA is located on the western shoreline of the San Francisco Bay, at the southern tip of the Bayview Hunters Point Area and currently comprises over 150 acres (refer to Figure A-1). CPSRA was acquired by the State in 1977 for development as a State recreation area and is the State’s first and only urban state park. The southern portion of the park is the most developed and actively used area while the northern areas are unimproved and underutilized. The southern portions of CPSRA include picnic areas and restrooms, a fitness course, a bicycle and (nature) walking path (including portions of the San Francisco Bay Trail [Bay Trail]), and

shoreline access to the Bay for water-dependent recreation. CPSRA lands to the north and east of the Candlestick Park stadium are currently used for stadium parking.

Existing parks and recreation amenities in the CPSRA are organized into “areas” shown in Figure A-1. The “Phase Four” area of the CPSRA site (located roughly east of Candlestick Park, south of the loop road, and north of the parking lot entrance) contains construction rubble and debris. The California Integrated Waste Management Board (CIWMB) completed a rubble and debris removal project in April 2009. As a result, the majority of the rubble and debris in this area was either removed or crushed on site.

The northernmost area of CPSRA contains Yosemite Slough – a natural wetland that was filled and contaminated by surrounding industrial land uses over the years. The Yosemite Slough Restoration Project, a partnership between the State of California Department of Parks and Recreation (State Parks), the California State Parks Foundation, and various environmental organizations, includes plans for habitat restoration, soil remediation, trail construction, and educational programming in the area surrounding the slough. The first phase of construction of the Yosemite Slough Restoration Project was completed December 2012.

As shown in Figure A-1, the “Last Port” area is located in the southernmost portion of the CPSRA, south of Harney Way and between Highway 101 (US 101) and Jamestown Avenue/Hunters Point Expressway. The “Last Port” area is approximately 15.5 acres. Amenities in the Last Port area include restrooms, picnic areas, the 32-space natural surface parking lot, unpaved trails, and a portion of the Bay Trail that runs along the shoreline.

The main vehicular access points to the CPSRA are from Hunters Point Expressway which turns into Donner Avenue (Donner Avenue and the associated parking lot within are under the jurisdiction of the CPSRA) and the parking lot south of Harney Way within the “Last Port” area. The Donner Avenue parking lot is paved and includes 180 marked parking spaces (of which 5 are handicap spaces). The Harney Way parking lot can accommodate up to 32 spaces in an unmarked natural surface lot.¹ When the gates are open, the parking lot typically is about 60 percent full (approximately 19 cars).² No overnight parking is allowed and the gates are locked at night. The parking lot is open from 8 a.m. to 5 p.m. daily except on Thursdays and Fridays when it is closed due to temporary service reductions.³ The northern portion of CPSRA (near Yosemite Canal) is also accessible from nearby streets.

The annual visitation for day use at CPSRA for 2010/2011 was reported as 19,473 paid day-use passes and 106,391 free day-use visitors, for total of 125,864 (California State Park System 2011). The Bay Trail is a planned recreational corridor that, when complete, will encircle the San Francisco and San Pablo bays. The Bay Trail is administered by the Association of Bay Area Governments (ABAG). Portions of the Bay Trail traverse within the CPSRA (including the Last Port area south of Harney Way [refer to Figure A-2a and A-4, and Attachment A.2⁴], adjacent to Hunters Point Expressway, and along the shoreline). Approximately 2.7 million people live within 2 miles of the Bay Trail, a number that will increase to 2.9 million by the year 2020 (ABAG

¹ CPSRA Preliminary General Plan and Draft EIR, 1/ 2012, page 2-73, (Musillami, pers. comm., 2009).

² Personal communication with Steve Musillami, State Parks, 1/11/13.

³ Hours of operation are per the State Parks website, accessed on 1/14/13 at http://www.parks.ca.gov/?page_id=519.

⁴ Personal communication with Maureen Gaffney, 11/7/12. Updated map of Bay Trail provided and included in this appendix as Attachment A.2.





Figure A-2a
Land Transfer Area within the CPSRA

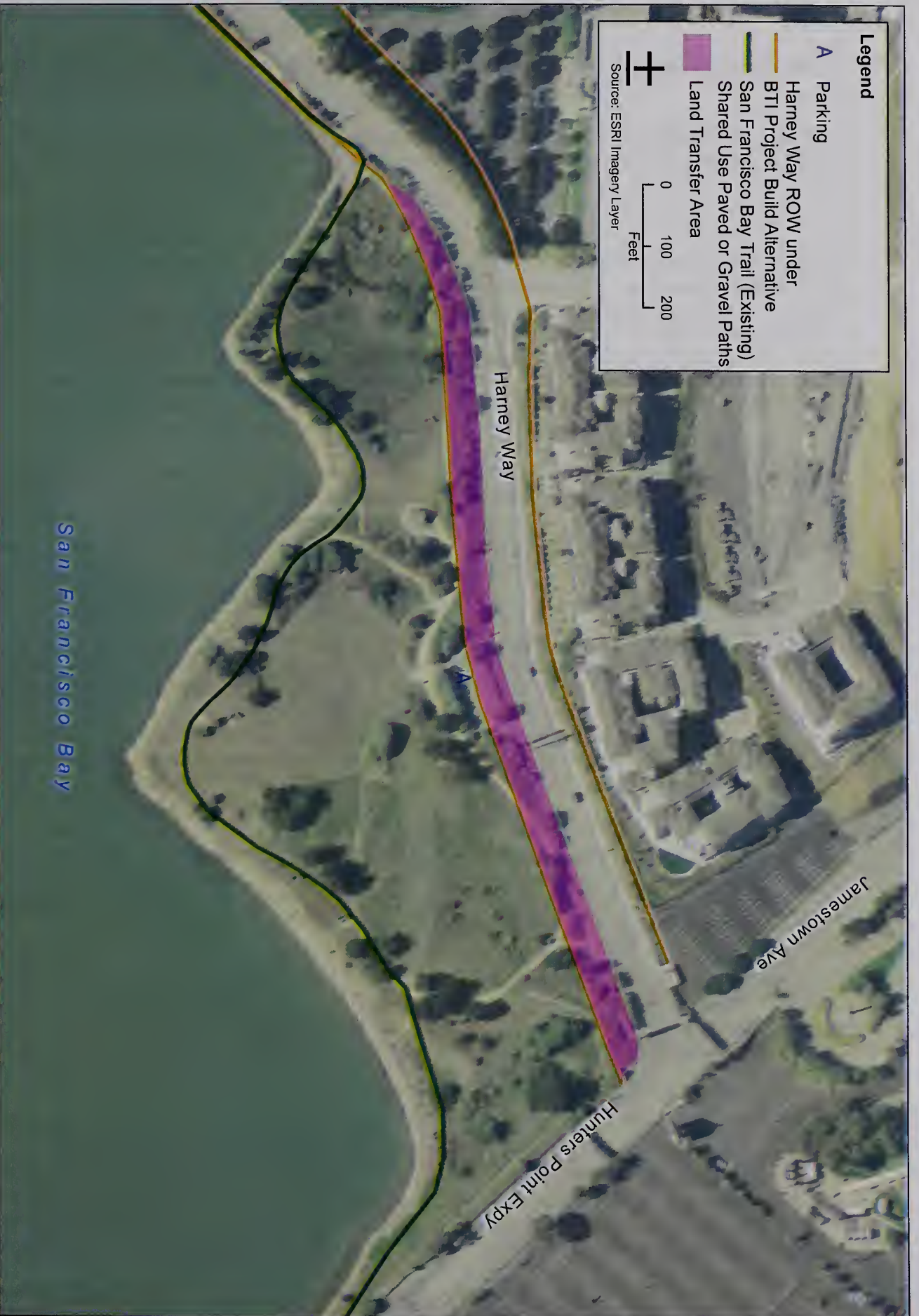


Figure A-2b
Section 4(f) Use of CPSRA

2012). The Bay Trail is discussed under *Resources Evaluated Relative to the Requirements of Section 4(f)*.

The lands within CPSRA are currently owned by State Parks or leased to State Parks from the State Lands Commission (State Lands). The agency with jurisdiction over the CPSRA is State Parks.

CPSRA Land Transfers

In 2009, the Legislature, through Senate Bill 792, created the framework for the redevelopment of Candlestick Point and the former Hunters Point Shipyard, including the reconfiguration of the CPSRA. The Legislature authorized a pair of agreements (the Park Reconfiguration Agreement and the Trust Exchange Agreement) between several public agencies, including State Parks, State Lands Commission and the San Francisco Redevelopment Agency (SFRA), under which State Parks will transfer approximately 20 net acres of land, which consists of parking lot areas and areas covered in rubble or sparse vegetation, to the City of San Francisco Office of Community Investment and Infrastructure in exchange for park funding.

Under this pair of agreements, a 1.3 acre portion of the CPSRA adjacent to Harney Way will be transferred to the City for proposed transportation improvements, including the BTI Project. The Transfer Area (discussed under *Transfer Area*) adjacent to Harney Way and affected by the BTI Project is shown in Figure A-2a and A-2b. The existing State Parks General Plan for the CPSRA (as revised in January 2013) is consistent with the agreements between the State and City of San Francisco for a reconfigured CPSRA.

Under the Park Reconfiguration Agreement and Trust Exchange Agreement, State Parks will receive \$50 million for the CPSRA for operations and maintenance, park improvements, and transfers of land near the shoreline. These funds will come to State Parks over time as the State transfers land to the City in four phases concurrent with redevelopment of adjacent lands at Candlestick Point. At each phase, State Parks will receive a portion of the total \$50 million, in proportion to the acreage transferred to the City at that time. As State Parks receives these funds, the first \$10 million will be allocated to fund operations and maintenance; the next \$40 million will fund improvements.

Upon completion of the land transfers and facility improvements, CPSRA acreage will total 131.5 acres and will include substantially more improved parkland and water access than it currently provides.

Transfer Area

The BTI Project would develop a 1.3-acre strip of land along Harney Way referred to in this document as the "Transfer Area." See Chapter 1 of the EA for a detailed description of the BTI Project. The Transfer Area is within the present CPSRA boundaries (described under Impacts to *Section 4(f) Property*, below), but will be transferred to the City under the agreements before the BTI Project work begins there.

CPSRA General Plan

In January 2012, California State Parks released the public draft of the Preliminary General Plan and Draft EIR for the CPSRA. This General Plan contains a description of the goals and guidelines for future development and management of the CPSRA, including transfer of the area adjacent to Harney Way. The CPSRA Concept Master Plan (prepared in April 2012) included in the September 2012 Final Program EIR/Response to Comments is included in this

analysis as Figure A-5. As shown, a parking lot is planned to be located immediately adjacent to (south of) Harney Way.

Impacts to Section 4(f) Property

The CPSRA is publicly owned and designated as a state recreation area, making it eligible for protection under Section 4(f). For the purposes of this analysis, the 1.3-acre Transfer Area is also considered eligible for protection under Section 4(f), because as of this writing title for this land has not been transferred to the City and the CPSRA still owns and administers the property. The Transfer Area will be in City ownership and no longer a part of CPSRA at the time of the BTI Project work.

The 1.3-acre Transfer Area (approximately 1,400 feet long and 40 feet wide) is located at the northern edge of the "Last Port" Area adjacent to Harney Way (see Figures A-1, A-2a and A-2b). It would be used to widen the existing Harney Way roadway (from an approximately 68-80 foot right-of-way [ROW] to 120 feet), and would include construction of: new turn lanes, new BRT lanes, new street lights and trees, replacement of the sidewalk on the north side of the roadway, new curb ramps, new curbs and gutters, replacement of utilities as needed and a new planted landscape strip. This 1.3-acre Transfer Area would be permanently incorporated into the ROW of Harney Way, a use under Section 4(f).

Current land uses in this 1.3-acre area include a guard rail immediately adjacent to Harney Way (along the south side of Harney Way); trees; brush and ruderal vegetation; utility poles and overhead electric lines; portions of an unpaved bicycle/pedestrian trail that runs parallel to Harney Way; a portion of a pedestrian overcrossing near the intersection of Harney Way and Hunters Point Expressway/Jamestown Avenue; a picnic table and windscreen west of the parking lot; and access to (two points of ingress/egress) and portions of a small natural surface parking lot that can accommodate 32 vehicles in unmarked parking spaces.⁵ Under the No Build Alternative, Harney Way is planned for development to accommodate future traffic by other development projects and would have a similar impact as the Build Alternative.

Temporary Construction-Related Effects

Except for the parking lot, a picnic table and windscreen located immediately west of the parking lot, and portions of unpaved trail adjacent to Harney Way within the 1.3-acre Transfer Area, none of the existing CPSRA recreational amenities in the Last Port area would be affected by the BTI Project on a temporary or permanent basis.

There are two existing points of ingress/egress off of Harney Way to the existing parking lot. The area adjacent to the 1.3-acre Transfer Area (to the south) would temporarily be affected by construction activities related to the BTI Project including temporary changes in access, increases in noise from construction activities, and views of construction equipment. Maintenance of vehicular access to the parking lot during construction would be coordinated between State Parks and the City. Continuous pedestrian and bicycle access to the CPSRA would be provided at all times. CPSRA visitors parking their cars and park users in the vicinity could also experience temporary construction-related noise effects but would not experience any loss of access or usage of recreational facilities. This parking lot is already in proximity to the existing Harney Way (and already exposed to noise levels typical of an urban park), and

⁵ CPSRA Preliminary General Plan and Draft EIR, January 2012, page 2-73, (Musillami, pers. comm., 2009).

potential changes to the viewshed would be mitigated in the long term as a result of landscaping and rehabilitated roads.

Section 4(f) Use

Widening Harney Way would require the use of the 1.3-acre Transfer Area, which includes portions of the unpaved trails immediately adjacent to Harney Way and west and east of the parking lot and removal of the pedestrian overcrossing at the intersection with Jamestown Avenue/Hunters Point Expressway. The Bay Trail in the "Last Port" area of the CPSRA is the trail that is adjacent to the Bay shoreline only. Signage during construction would be provided to direct pedestrians and bicyclists to existing trails. Future development planned in this area under the Build alternatives (refer to Figure A-5) includes a new trail adjacent to Harney Way that would connect to other areas in the CPSRA. Thus, the BTI Project development of the Transfer Area would not affect the Bay Trail. The picnic table and windscreen west of the parking lot in the Transfer Area would be relocated to another suitable area of CPSRA as specified by State Parks.

There would also be a loss of area equivalent to approximately 8-16 parking spaces in the natural surface parking lot where the new ROW would be established. Although the parking lot has capacity for approximately 32 spaces, as stated by State Parks, it does not typically fill to capacity (60 percent or approximately 19 cars). The parking lot is not planned to be used as a staging area for the BTI Project and the City will ensure that pedestrian/bicycle access and the parking area is available for visitors. To account for the loss of parking space area in the natural surface parking lot to accommodate the new ROW, the existing parking lot would be reconfigured to include areas to the west, east, and south (including grading as needed, addition of gravel/natural surface cover, and movement of the parking boundary edges) to accommodate an equivalent area for 32 parking spaces. The design of the additional parking space area would be coordinated between State Parks and the City. In addition, signage to inform visitors of other available parking areas (Jamestown Avenue, Hunters Point Expressway, and the Donner Avenue CPSRA lot) would occur during the construction period.⁶ Future development of Harney Way with new transportation uses would improve transit access to the area.

The transfer of the 1.3 acres for development of Harney Way is a planned use and would not impede future development of a parking lot or other improvements described in the CPSRA General Plan. The CPSRA GP EIR includes future development of a parking lot along Harney Way. In addition, the land transfer would fund other proposed improvements in the "Last Port" area including landscape areas and features, interpretative signage/art, trails, and additional parklands in "The Neck" connecting the "Last Port" to other areas of the CPSRA, as shown on Figure A-5.

Post construction, ingress/egress to the Harney Way parking lot would be restored. Restrooms and the remaining picnic areas in the vicinity of construction in the "Last Port" area of CPSRA would not be affected by the proposed improvements. Future access for pedestrians/bicyclists along Harney Way would be provided by a Class 1 commuter trail and access across Harney Way would be provided at Executive Park Boulevard and at the intersection with Jamestown Avenue/Hunters Point Expressway. The City-owned pedestrian overcrossing at Harney Way and Jamestown Avenue/Hunters Point Expressway, is not a CPSRA facility, is not within

⁶ Candlestick Point State Recreation Area Preliminary General Plan and Draft Program Environmental Impact Report, 1/ 2012, page 2-73, (Meneguzzi, pers. comm., 2009).

CPSRA boundaries, and would be removed as part of the ROW reconfiguration. However, the pedestrian overcrossing is an integral part of stadium operations. As long as the stadium remains, as described in Section 1.4.1.8 of the EA, the pedestrian overcrossing would remain. Under this scenario, the Harney Way alignment would be reconfigured around the existing overcrossing (the number of lanes would remain the same).

Other Areas Within the CPSRA

The BTI Project along Arelious Walker Drive and Carroll Avenue is a street corner that goes through the CPSRA, and Thomas Avenue is immediately adjacent to the CPSRA boundary. The BTI Project includes street improvements within the existing ROW on these three roadways. Currently these areas do not have any recreational uses and are surrounded by paved parking lots and, other vacant areas that will be transferred to the City as part of the land transfer agreements. These areas are not considered Section 4(f) property, even though they are currently within CPSRA boundaries. Access to the CPSRA from Carroll Avenue (and the associated ranger station) will be maintained.

The land transfer would realign the boundary of the CPSRA at 'The Neck' (see figure A-5), making this section wider and improving the connectivity between the different areas of the CPSRA. It is necessary to remove Hunters Point Expressway to allow for this realignment. The BTI Project is designed to be consistent with this realignment and would not hinder its implementation. However, under the Design Option B scenario, Candlestick Park stadium is not demolished and Hunters Point Expressway remains in existence, including usage by the BTI Project with signage and striping required. Therefore, although not caused by the BTI Project, under Design Option B, this future CPSRA boundary alignment could not take place. As the BTI Project is not responsible for developing a transportation facility on this future parkland, and indeed will assist in providing a replacement facility to Hunters Point Expressway if and when the stadium is demolished, the impact from the BTI Project on the future alignment of 'the Neck' is not considered a Section 4(f) use.

Conclusion

Under the Build Alternative, the Section 4(f) use of the 1.3-acre Transfer Area adjacent to Harney Way for the new ROW would not adversely affect the activities, features, or attributes of the overall CPSRA or the "Last Port" area. The Section 4(f) use would temporarily affect a small percentage of the CPSRA area along Harney Way during construction, would permanently result in a replacement in-kind of vegetation and trees along the park boundary, would move the picnic table and windscreen west of the parking lot (if necessary), and provide equivalent space within the natural surface parking lot. Replacement of vegetation/trees, location of the picnic table and windscreen, and future design of the parking lot would be coordinated between State Parks and the City. Furthermore, development activities associated with the widening of Harney Way would be coordinated with State Parks, to accommodate future plans within the CPSRA for construction of a future Class I commuter trail and a new parking lot. Therefore, together with the avoidance and minimization measures listed below, construction of the BTI Project as proposed is a *de minimis* impact to the Section 4(f) property.

Avoidance, Minimization and/or Mitigation Measures

The following measures are proposed to minimize harm to the Section 4(f) property.

- Prior to construction, the City will coordinate with State Parks to ensure provision of access to pedestrian/bicycle paths in the Last Port area of the CPSRA. This may include but is not

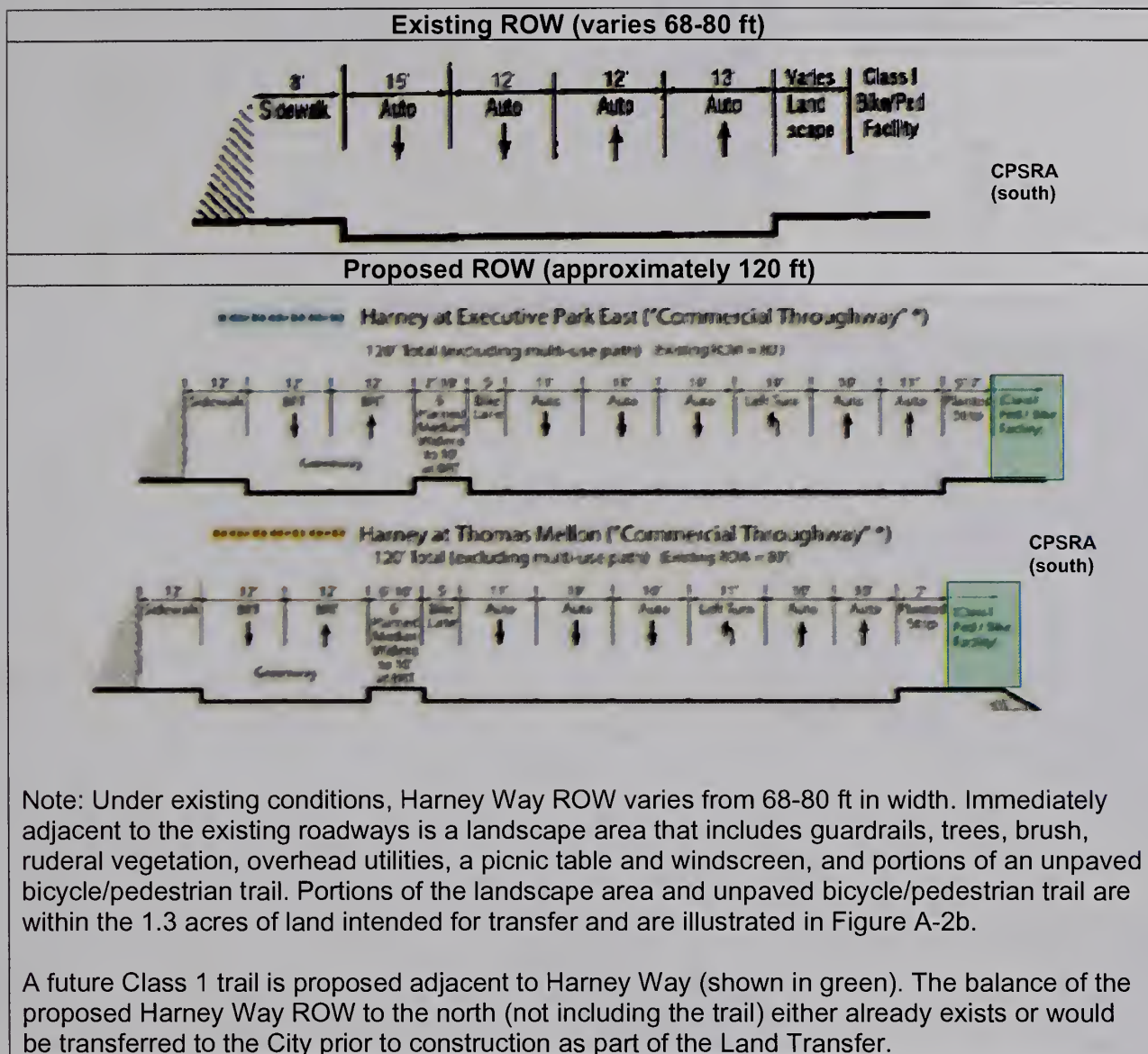


Figure A-3
Existing and Proposed Harney Way ROW



Figure A-4
Parks and Recreation Areas

Draft

CONCEPT MASTER PLAN

LANDSCAPE TYPES

- tidal marsh zones
- meadow lawn
- grassland / coastal shrub
- coastal native landscape
- active lawn
- community garden / plant nursery
- beach
- paving
- parking
- seasonal rain garden
- landforms
- coastal shoreline treatment

GATHERING AREA

- family
- group

PATH TYPES

- class 1 bike
- commuter connector
- class 1 (outside SRP)
- bay trail (service access)
- hard trail
- soft trail

FACILITIES

- buildings
- restrooms
- interpretive program area / pavilion
- interpretive signage / art
- info kiosk
- mural bus rapid transit stop
- overland flow point

DRAFT

0 300 600 1,200 Feet

1 inch = 600 Feet at 11 x 17 print

04.10.12

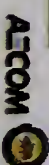


Figure A-5
Preliminary CPSRA General Plan - Concept Master Plan

limited to trail detours and signage to reroute park users to alternate unpaved trails and to the Bay Trail along the shoreline as well as other available parking. The City will also relocate the picnic table and windscreen to another suitable area of CPSRA as specified by State Parks.

- Prior to construction, the City will coordinate with State Parks to ensure provision of adequate parking in the Last Port area of the CPSRA including the permanent expansion of the existing parking lot to the south, west, and east, to provide an equivalent parking area. If necessary, signage during construction will direct drivers to additional parking available along Jamestown Avenue, Hunters Point Expressway, or to the Donner Avenue CPSRA lot.
- During construction, the contractor shall provide for such local access by phasing of operations, bridging, or employing other procedures as approved by the City Representative. This would include limiting the working hours to between 8 a.m. to 5 p.m., if required. Access to CPSRA via the Harney Way Parking lot will be maintained at all times, will be coordinated with State Parks, and in the event access to the CPSRA is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular, bicycle, and pedestrian access. The City (San Francisco Department of Public Works or DPW) will also assign a public information officer to the BTI Project who will work with the community to reduce any other construction impacts of the BTI Project.
- The temporary construction zone(s) will be fenced to ensure the exclusion and safety of park visitors.
- In the event that any inadvertent damage occurs to the parklands or facilities at CPSRA, the property will be restored to the condition that existed prior to the construction activities or better.

Following BTI Project construction on Harney Way, the CPSRA will continue to function as it does currently and conditions and access to recreational facilities and transit options in the Transfer Area will be equivalent to or better than under existing conditions.

Coordination with Agencies Having Jurisdiction

As a result of the land transfer, the Office of Community Investment and Infrastructure will have jurisdiction over the area of land transfer upon completion of the BTI Project. To account for the interim period before title of the land included in the exchange between State Parks, State Lands, and the City, the City has informed State Parks of the impacts of the BTI Project, discussed the measures to minimize effects, and the Department's intention to adopt a *de minimis* finding.⁷ Written concurrence from the City and State Parks that the proposed BTI Project would result in a *de minimis* use of CPSRA will be sought after the public comment period and included in the final EA.

De Minimis Impact Finding Review Process

Given the above analysis of the BTI Project, a *de minimis* impact finding is proposed for the CPSRA. Through this draft EA, this proposed *de minimis* finding is being made available for public and agency review as required under proposed 23 CFR 774.5(b)(2), implementing Section 6009 of SAFETEA-LU (71 FR 42611). Public and agency comments on the proposed *de minimis* impact finding, either through review of the EA or participation in the public hearing on the EA, will be analyzed. If the analysis introduces no significant controversy, and

⁷ Personal communication with Steve Musillami, State Parks, 1/14/13.

concurrence is received from the officials with jurisdiction over the Section 4(f) resource, the Department, as assigned by the Federal Highway Administration (FHWA), will make the final determination on the *de minimis* finding and include it in the final EA document.

B. Resources Evaluated Relative to the Requirements of Section 4(f)

This section of the document discusses parks, recreational facilities, wildlife refuges and historic properties found within or adjacent to the BTI Project area that do not trigger Section 4(f) protection either because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, 4) the Project does not permanently use the property and does not hinder the preservation of the property, or 5) the proximity impacts do not result in constructive use.

List and Description of Potential Section 4(f) Properties

Historic Architectural Resources

The five architectural resources identified in the architectural area of potential effect (APE) are not significant historic architectural resources for the purposes of Section 106 of the NHPA. These resources were not determined to be eligible for any local, state or the National Register of Historic Places (NRHP). Therefore, there is no potential for effects on historic resources, and no mitigation is required. Because the resources are not eligible for listing or listed on the NRHP, there would be no Section 4(f) use (49 USC 303) either (refer to Section 2.1.7.2 Cultural Resources of the environmental document).

Archeological Resources

There are four previously recorded archaeological resources (CA-SFR-7, SFR-11, SFR-110, and the Thomas-Hawes Mound) predicted to be present in the project APE. Extended Phase 1(XP1) testing per the Programmatic Agreement (PA) will be conducted to both determine whether these sites are in fact present and determine if the sites are eligible for the NRHP.

Section 4(f) applies to all archaeological sites that are on or eligible for inclusion on the National Register and that warrant preservation in place. None of the sites thought to be present in the APE have been evaluated for National Register eligibility with the exception of CA-SFR-7, which is eligible under Criterion D and therefore does not warrant preservation in place. None of the remaining three resources are likely to meet Section 4(f) requirements for the following reasons:

1. Shell midden sites are typically eligible under Criterion D for their data potential and are not considered for preservation in place.
2. The recorded location of these sites in a highly developed urbanized context also prohibits any public use or interpretation of the resources if they are in fact present.
3. Once XP1 testing is complete, vertical environmentally sensitive areas (ESAs) will be set in consultation with Caltrans to avoid potential Section 4(f) properties.

Therefore there would be no Section 4(f) use of these resources.

There are no previously recorded eligible historical archaeological resources within the APE. Therefore there would be no Section 4(f) use. However, it should be noted that the Historic Property Treatment Plan (HPTP) developed for the BTI Project does identify several different historical archaeological property types that may be present in the APE. The HPTP notes the potential to encounter these types of properties in the APE is low.

Wildlife and Waterfowl Refuges

There are no national, state, or locally significant wildlife and waterfowl refuges within 0.5 miles of the BTI Project area.⁸ The Yosemite Slough, which is within the CPSRA, is not a wildlife refuge, but is currently undergoing restoration of tidal wetlands in a 34-acre parcel immediately surrounding Yosemite Slough (Yosemite Slough Restoration Project), adjacent to BTI Project streets.⁹

Parks and Recreation Areas

As described above, the BTI Project proposes a *de minimis* impact on the CPSRA. Other public parks and recreation areas within approximately 0.5 miles of the Project area are included in this analysis as potential Section 4(f) properties (refer to Figure A-4 and Table A-1, parks within 0.5 miles are shown in grey).

Table A-1. Parks and Recreation Areas

Park	Location	Approximate Size	Uses	Management
1. Candlestick Point State Recreation Area	Along the shoreline of Harney Way, around Candlestick Point, and around Hunters Point Shipyard	150 acres	Passive and active recreational uses, including but not limited to picnic, trails, fishing, windsurfing, etc.	State Parks
2. Gilman Park/Playground	Gilman Avenue and Griffith Street	5 acres	Playground, ballfield, meeting or event room	SF Department of Real Estate
3. Little Hollywood Park	Lathrop Avenue and Tocoloma Avenue	1 acre	Basketball courts, open space	SF Recreation and Parks Department
4. Silver Terrace Playground	Terminus of Waterville Street	5 acres	Ballfields, tennis court, basketball court, playground	SF Recreation and Parks Department
5. Bayview Hill Park and Open Space	Key Avenue /Jamestown Avenue	44 acres	Open space, parking area	SF Recreation and Parks Department
6. Bay View Park/ K.C. Jones Playground	3rd Street and Armstrong Avenue	5 acres	Playground, ballfield, pool, basketball courts	SF Recreation and Parks Department
7. Adam Rogers Park	Ingalls Street and Oakdale Avenue	3 acres	Basketball court, playground	SF Recreation and Parks Department
8. Ridgetop Plaza	Whitney Young Circle	0.3 acres	Open plaza, 1 basketball hoop, playground	SF Department of Real Estate
9. Earl P. Mills Neighborhood Center	100 Whitney Young Circle	Building and playground	Playground, community center, auditorium	SF Department of Real Estate

⁸ Based on a review of online web resources, including:
<http://www.fws.gov/refuges/refugeLocatorMaps/california.html> and
<http://www.dfg.ca.gov/wildlife/gamerefuges/>.

⁹ http://www.sfbayjv.org/images/Yosemite_Slough_Northgate_Map_big.jpg

Park	Location	Approximate Size	Uses	Management
10. Hilltop Park	LaSalle and Whitney Young Circle	3 acres	Open space, picnic area	SF Recreation and Parks Department
11. Joseph P. Lee Recreation Center	1395 Mendell Street	Building and playground	Gym with basketball court, tennis courts, playground	SF Recreation and Parks Department
12. Hunters Point /Milton Meyer Recreation Center	195 Kiska Road	Building and associated fields	Tennis courts, gymnasium, meeting spaces, ballfield, playgrounds	SF Recreation and Parks Department
13. Palou and Phelps Park	Palou Avenue and Phelps Street	3 acres	Playground, open space	SF Recreation and Parks Department
14. Youngblood-Coleman Playground and Recreation Area	Galvez Street and Mendell Street	6 acres	Soccer field, ball field, basketball court, tennis courts, playground	SF Recreation and Parks Department
15. Selby and Palou Mini-Park	Palou Avenue and Selby Street and Quesada Avenue	0.5 acres	Playground, picnic area	SF Recreation and Parks Department
16. LeConte Mini-Park	845 Meade Street	0.5 acres	Open area	SF Recreation and Parks Department
17. Candlestick Park (Stadium)	490 Jamestown Avenue	Building	Stadium	SF Department of Real Estate
18. San Francisco Bay Trail	Through Heron's Head Park and Candlestick Point State Recreation Area	Trail (500 miles when completed)	Multi-use trail, some parts within existing roadway system	Association of Bay Area Governments
19. India Basin Shoreline Park	Innes Avenue and Hunters Point Boulevard	12 acres	Playgrounds, picnic areas, shore access.	SF Recreation and Parks Department
20. Heron's Head Park and EcoCenter	Cargo Way and Jennings Street, near India Basin Park	24 acres	Open space and EcoCenter educational facility	Port of San Francisco
Source: San Francisco Recreation & Parks webpage http://sfrecpark.org , accessed February 2012; HNTB, 2011, updated 2012 California Department of Parks and Recreation webpage http://www.parks.ca.gov/MediaGallery/?page_id=519%=&m=brochures .				

Pedestrian and Bicycle Routes and Facilities

Several existing bicycle facilities are located in the BTI Project area, though none are located in the Transfer Area. These facilities include municipal routes that are part of the San Francisco Bicycle Network, and existing and planned regional routes that are part of the Bay Trail system. The following bicycle routes exist in the Project area:

- North-South Route 5 runs along Bayshore Boulevard, Third Street, Illinois Street, and The Embarcadero between Visitacion Valley and North Beach. In the Project area, this route is a Class III¹⁰ facility.
- North-South Route 7 runs between Mariposa Street and Carroll Avenue via Indiana Street, Third Street, Phelps Street, Palou Avenue, and Keith Street. It is a Class III facility, but wider travel lanes that allow bicyclists to ride outside the path of vehicle travel are provided on Keith Street and sections of Indiana and Phelps Streets. Route 7's southern terminus is at Keith Street and Carroll Avenue at the Bay View Playground.
- North-South Route 25 runs between southeastern San Francisco and the Marina District. Within the Project area, Route 25 runs along Bayshore Boulevard as a Class II facility. North of the Project area, it runs as both a Class II facility (e.g., along Potrero Avenue, Harrison Street, 11th Street, and portions of Polk Street) and Class III facility (e.g., along 10th Street and portions of Polk Street).
- East-West Route 60 is a cross-city route from Great Highway and Vicente Street to Cesar Chavez and Illinois Streets. In the Project area, it is a Class III facility along Cesar Chavez Street between Mississippi Street and Bayshore Boulevard. It is a Class II facility between Mississippi and Illinois Streets.
- East-West Route 68 runs from the Innes (north) gateway to the Hunters Point Shipyard along Innes Avenue, Hunters Point Boulevard, and Evans Avenue to Cesar Chavez Street along various bicycle facilities. This route has dedicated bicycle lanes (i.e., a Class II facility) along both sides of Hunters Point Boulevard between Innes Avenue and Evans Avenue and along Evans Avenue east of Third Street. This route has shared auto-bicycle lanes (i.e., Class III facility) on both sides along Innes Avenue between the Innes (north) gateway and Hunters Point Boulevard and along Evans Avenue west of Third Street.
- East-West Route 70 runs along Palou Avenue, Silver Avenue, and Monterey Boulevard as a Class III facility. The eastern terminus of this route is currently the Crisp (south) gateway at Griffith Street and Palou Avenue.
- Connector Route 170 runs along Oakdale Avenue between Third Street and Bayshore Boulevard. This route has bicycle lanes (i.e., a Class II facility) on both sides of the street between Third Street and Bayshore Boulevard.
- Connector Route 805 provides a connection between Beatty Road at Tunnel Avenue (near Caltrain's Bayshore Station) in Brisbane and Third Street at Carroll Avenue in the Bayview Hunters Point area. This route is a Class III facility around Candlestick Park at the CPSRA via Harney Way, Hunters Point Expressway, Gilman Avenue, Arellano Walker Drive, and Carroll Avenue. A portion of Route 805 is designated as part of the Bay Trail.
- The Bay Trail is a planned recreational corridor that, when complete, will encircle the San Francisco and San Pablo bays. The Bay Trail will run along the shoreline of Candlestick Point and Hunters Point as part of the "Blue Greenway" plan that is being coordinated by the

¹⁰ Bicycle facilities are typically classified as Class I, II, or III facilities. Class I facilities are bicycle paths with exclusive right-of-way for use by bicyclists or pedestrians. Class II bicycle facilities are bicycle lanes striped within the paved areas of roadways and established for the preferential use of bicycles, while Class III facilities are signed routes that allow bicycles to share streets with vehicles.

Port of San Francisco.¹¹ Potential impacts on the Bay Trail are discussed under *Impacts on Section 4(f) Property*.

Changes to bicycle facilities and routes are proposed as part of the BTI Project for Routes 60, 68, and 805:

- On Cesar Chavez Street east of US-101 to Illinois Avenue, the San Francisco Municipal Transportation Agency (SFMTA) is proposing the improvement of pedestrian/bicycle facilities. As currently envisioned, Route 60 would be improved in this segment to consist of a Class I bikeway and existing sidewalks would be improved. As part of the BTI Project, a cantilevered structure would be added along the south side of Cesar Chavez Street in the vicinity of the Evans Avenue intersection. This new structure would provide sufficient width to accommodate a Class I bikeway and improved pedestrian facility. The new cantilevered structure would be on City and County of San Francisco (County) right-of-way.
- On Hunters Point Boulevard between Evans Avenue and the Innes Avenue, a bicycle lane (Class II) would be reconstructed in each direction. On Evans Avenue between Cesar Chavez Street and Hunters Point Boulevard and on Innes Avenue between Hunters Point Boulevard and the Innes (north) gateway to the HPS, a bicycle lane (Class II) would be constructed in each direction. These segments are part of Route 68.
- On Gilman Avenue between Donahue Street (a proposed street east of Arelious Walker Drive) and Arelious Walker Drive, a bicycle lane (Class II) would be provided in each direction. This segment is part of Route 805. On Alana Way between US-101 and Harney Way, a bicycle lane (Class II) would be provided in each direction. On Harney Way between Alana Way and Jamestown Avenue, a bicycle lane (Class II) would be provided on the north side of the roadway. These segments are also part of Route 805.
- Route 805 would be removed in two places: on Carroll Avenue between Arelious Walker Drive and Jennings Street, and on Arelious Walker Drive between Gilman and Carroll Avenues. It would be relocated to Gilman Avenue between Arelious Walker Drive and Jennings Street, and to Jennings Street between Gilman and Carroll Avenues. On Carroll Avenue, the relocated route would be a signed route only (Class III), similar to the existing conditions for this route.

In March 2008, the FHWA issued Final Rules modifying how Section 4(f) approvals are given. These rules (23 CFR 774.13) identified various exceptions to the requirement for Section 4(f) approval. Among these exceptions are bicycle trails and pedestrian facilities that are potentially affected by a proposed project, under the following conditions:

- Trails, paths, bikeways, and sidewalks that occupy a transportation facility right-of-way without limitation to any specific location within that right-of-way, so long as the continuity of the trail, path, bikeway, or sidewalk is maintained. (23 CFR 774.13[f][3])
- Trails, paths, bikeways, and sidewalks that are part of the local transportation system and which function primarily for transportation. (23 CFR 774.13[f][4])

Therefore, any bicycle routes and pedestrian facilities on public roadways in the Project area that are being modified as part of the Project, but are not being made discontinuous, or that function primarily for transportation do not require further analysis as potential Section 4(f) resources. Table A-2 shows which of the two exceptions listed above applies to each of the

¹¹ Refer to Attachment A.2.

bicycle routes and pedestrian facilities in the Project area that are being modified as part of the BTI Project.

Table A-2. Section 4(f) Exceptions to Local Bicycle Routes and Pedestrian Facilities

Bicycle Route/Pedestrian Facility	Section 4(f) Exception
Route 5	23 CFR 774.13(f)(3)
Route 7	23 CFR 774.13(f)(3)
Route 25	23 CFR 774.13(f)(3)
Route 60	23 CFR 774.13(f)(3)
Route 68	23 CFR 774.13(f)(4)
Route 70	23 CFR 774.13(f)(3)
Route 170	23 CFR 774.13(f)(4)
Connector Route 805	23 CFR 774.13(f)(3)

As documented above, continuity for all local bicycle routes would be provided, and under 23 CFR 774.13(f)(3), the provisions of Section 4(f) would not be triggered. Under 23 CFR 774.13(f)(4), the provisions of Section 4(f) would not be triggered as all Class II bicycle lanes are part of the local transportation system and function primarily for transportation.

Impacts on Section 4(f) Property

This section discusses potential impacts of the Build Alternative on Section 4(f) property including the Bay Trail.

The BTI Project includes rehabilitation/reconstruction of some roadways on which the Bay Trail is planned or traverses (including Alana Way (planned), Harney Way west of CPSRA (planned), and Illinois Street).¹² On Illinois Street and Cargo Way the Bay Trail is shared-use with the roadway and is not considered a Class I facility.¹³ Improvements on this street would occur within the existing ROW and access and use of the Bay Trail would be equal to or improved compared to existing conditions. Continuity of the Bay Trail on Illinois Street and Cargo Way would be maintained and, under 23 CFR 774.13(f)(3) (as described above) the provisions of Section 4(f) would not be triggered. Further, the BTI Project would not impede future development of the planned portions of the Bay Trail on either Alana or Harney Way.

The BTI Project also involves the addition of bus and rapid transit service and streetscape changes to the existing street network. Twenty parks are within 0.5 mile of the BTI Project, but only the parks and recreation areas that are adjacent to these transportation improvements would potentially be affected by the BTI Project through direct, temporary, or constructive use.

Of the parks and recreation areas listed above in Table A-1, only the following are adjacent to the areas where BTI Project construction would occur:

¹² Personal communication with Maureen Gaffney, ABAG, 11/7/12.

¹³ Bicycle network classes as defined by the San Francisco Metropolitan Transit Agency (SFMTA), <http://www.sfmta.com/cms/bcomm/3180.html>.

- Candlestick Point State Recreation Area (refer to Section A)
- India Basin Shoreline Park
- Gilman Playground
- Candlestick Park (Stadium)
- Candlestick Point/Hunters Point Shipyard Development Plan Wedge Park
- Bayview Hill Park and Open Space

A description and analysis of each of these park and recreation areas is provided below. All other properties listed in this analysis would not be affected by the BTI Project because 1) there would be no direct use and construction activities would be too distant to result in impacts, 2) access to the park would not change, and 3) there is no potential for constructive use.

Candlestick Point State Recreation Area (CPSRA)

Refer to discussion in A. Section 4(f) De Minimis Determination.

India Basin Shoreline Park

India Basin Shoreline Park is a 12-acre park on the India Basin shoreline, north of Innes Avenue. The park is managed by the San Francisco Recreation and Parks Department (SFRPD) and includes two children's playgrounds, a basketball court, picnic areas, recreational trails, and shoreline access to the Bay for water-based recreation. Access to the park is from Hunters Point Boulevard, and there is a parking area off Hawes Street. In general, recreational uses in the park are concentrated near the shore and away from the roadway.

The BTI Project proposes roadway resurfacing and restriping on Hunters Park Boulevard in front of the park to allow for express bus service to the proposed Hunters Point Transit Center. No work is proposed within the park boundaries or would result in changes in access to the park. Therefore, there would be no temporary or permanent direct use that would trigger the provisions of Section 4(f). The property manager, the SFRPD, was consulted on this finding.¹⁴

Constructive use impacts are proximity impacts that substantially impair the purpose of the land. The BTI Project would not change the visual setting adjacent to the park and no air quality impacts would result from the BTI Project. According to the Noise Study Report¹⁵ prepared for the BTI Project, a receptor modeled in the active use portion of the park closest to Hunters Point Boulevard currently experiences sound levels of 57 dBA¹⁶. Sound levels in 2035 would be the same under the Build and No-Build Alternative of the BTI Project, at 64 dBA. Therefore, there would be no perceptible difference in sound levels at the park, regardless if the BTI Project was constructed, sound levels would be within acceptable limits for an urban park and would not impair public use of the park. Based on this, the proposed BTI Project will not cause a constructive use of India Basin Shoreline Park because the proximity impacts will not substantially impair the protected activities, features, or attributes of the park.

¹⁴ Personal communication with Frank Filice, SFDPW Project Manager, 2011.

¹⁵ BTI Project Noise Study Report, 2/12.

¹⁶ All sound levels are given in equivalent sound levels (Leq) and measured in decibels (dBA). Leq represents an average of sound energy occurring over a specified period, in this case 1 hour, the unit used by the FHWA.

Gilman Playground

Located next to Candlestick Park, the Gilman Playground is a 5-acre park that includes a sandy playground with climbing structures, a baseball field, and a basketball court. There is also a recreation center that offers afterschool activities and can be reserved for events. This facility is managed by the San Francisco Department of Real Estate. The park can be accessed via Gilman Avenue, Giants Drive, or Ingerson Avenue.

The only Project work that would occur adjacent to the park would be along Gilman Avenue (new and widened sidewalks and with pedestrian amenities) and Ingerson Avenue (widened sidewalks with pedestrian amenities). Project work would occur nearest to the third base baseline of the ballfield along Gilman Avenue. Along Ingerson Avenue there is a parking area, the recreation center and the playground. There would be no direct work within the boundaries of the park that would trigger the provisions of Section 4(f), nor would there be any changes in access to the park. The property manager, the San Francisco Department of Real Estate, was consulted on this finding.¹⁷

The BTI Project would not change the visual setting adjacent to the park, and no air quality impacts would result from the BTI Project. According to the Noise Study Report prepared for the Project, a receptor modeled in the ballfield of the park closest to Gilman Avenue currently experiences sound levels of 59 dBA. Sound levels under the Build Alternative would be 65 dBA. Along Ingerson Avenue, a modeled receptor in the playground area currently experiences sound levels of 51 dBA. This sound level would rise to 60 dBA under the Build Alternative. This would not constitute a noise impact because sound levels would be the same with or without the Project. Sound levels would remain within acceptable limits for an urban park and would not impair the use of the park by the public. Therefore, there would be no constructive use of Gilman Playground because the proximity impacts would not substantially impair the protected activities, features, or attributes of the park.

Candlestick Park (Stadium)

The Candlestick Park Stadium and parking lot are located north of Jamestown Avenue and west of Hunters Point Expressway. The stadium and parking lot are owned by the City and leased to the San Francisco 49ers National Football League (NFL) team. The entire site is 83 acres in area, of which 14.5 acres is covered by the stadium; the remainder is parking and other ancillary areas. The stadium and associated facilities are designated as city parkland, but are not used as park space and are generally not available for public use on non-game days. Therefore, Candlestick Park is not considered a Section 4(f) resource.

Candlestick Point/Hunters Point Shipyard Development Plan Wedge Park

One triangular public park area is proposed as part of the CP-HPS Phase II Development Plan that would be located along the future Harney Way Extension (Bayview Gardens). This wedge park would be 2.5 acres. This park currently does not exist and the land for this park is presently being used for stadium parking and circulation. As part of the planning and development of this area, two BRT stops would be constructed adjacent to the wedge park. These BRT stops are part of the ongoing planning of this area being conducted by the City and developer of the CP-HPS project and would therefore be constructed concurrent with development of the parks. As the BRT stops and wedge park do not presently exist, are part of this joint development effort, and would be built concurrently, there would be no direct or constructive use that would trigger

¹⁷ Personal communication with Frank Filice, SFDPW Project Manager, 2011.

the provisions of Section 4(f). Therefore, the provisions of Section 4(f) are not triggered. The property manager, the San Francisco Department of Real Estate, was consulted on this finding.¹⁸

Bayview Hill Park and Open Space

Bayview Hill Park is a 19-acre public park within a larger 44-acre open space area located on a hill that rises approximately 440 feet above the San Francisco Bay to the west of Candlestick Park stadium. The park encompasses a hilltop that features 360-degree views of San Francisco, the San Francisco Bay, Candlestick Park, and the CPSRA. The park and open space area is considered a Significant Natural Resource Management Area by the SFRPD and receives some active management of habitat. Visitor facilities include paved and gravel walking trails within an extensive natural habitat area. Access to the park is by way of Key Avenue from the west side of the park.

The BTI Project would require the use of a small area of land at the base of the park for the intersection reconfiguration at Jamestown and the Arelious Walker Drive extension, west of the existing Candlestick Park stadium. This portion of land is under the jurisdiction of the SFRPD. It is not presently being used as part of the park and is not included in the portion of the park that is designated as a Significant Natural Resource Management Area. This area includes a gravel access road and parking and is behind a locked fence that is opened on game days. Therefore, the land used by the project is not considered a Section 4(f) resource and the provisions of Section 4(f) are not triggered.

Construction of the BTI Project would not result in substantial impairment of the Bayview Hill Park and Open Space. During construction of the BTI Project, there would not be substantial increase in noise, change in access or change in viewshed that would adversely affect the attributes of the Park. As such, the portion of Bayview Hill Park closest to the project does not have any active park/recreational uses but is rather an access and gravel lot used for parking. The park is expected to function as it does currently without any substantial impairment to the activities, features, or attributes that qualify the park as a Section 4(f) resource. Following construction, the Jamestown Avenue and Arelious Walker Drive extension will provide enhanced access to the area bringing improvements to bicycle and pedestrian routes. No constructive use would occur.

C. Resources Evaluated Relative to the Requirements of Section 6(f) of the Land and Water Conservation Fund Act

State and local governments often obtain grants through the Land and Water Conservation Fund (LWCF) Act (16 USC 460l-8[f] and 36 CFR 59.1) to acquire or make improvements to parks and recreation areas. Section 6(f) of the act prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the U.S. Department of the Interior's (DOI's) National Park Service. Section 6(f) directs DOI to ensure that replacement lands of comparable value and function, location, and usefulness are provided as conditions to such conversions.

Portions of the CPSRA have been developed or improved with grants authorized under the LWCF Act, qualifying the CPSRA as a Section 6(f) resource.¹⁹ These areas are located in the

¹⁸ Personal communication with the San Francisco Department of Real Estate by Wells Lawson, 2011.

developed portion of CPSRA west of Hunter's Point Expressway. The BTI Project would not affect or use any parklands in these areas; no land improved or developed with LWCF grants would be converted to a non-recreational use by the BTI Project and no replacement lands are necessary.

The CP-HPS Phase II Redevelopment Plan would affect LWCF lands within the CPSRA. These lands will be converted to uses other than the public outdoor recreation. However, as the BTI Project would not affect these parcels within the CPSRA, they will not have a Section 6(f) effect and no further discussion is provided.²⁰

¹⁹ National Park Service. 2012. Land and Water Conservation Act website, Detailed Listing of Grants Grouped by County. Available at: <http://waso-lwcf.ncrc.nps.gov/public/index.cfm>. Accessed: 9/27/12.

²⁰ Refer to 6/27/11 Memorandum from BTC, Subject: Section 6(f) Analysis for Bayview Transportation Improvements Project, which describes the lands within CPSRA that are purchased with Land and Water Conservation Funds as a part of the CP-HPS Phase II Redevelopment Plan. This memorandum is included as Attachment A.1.

To: Project file	From: Mike Davis, revised by Sandy Ngan, Frank Filice, Christine Fukasawa, Elizabeth Antin
Date: June 27, 2011, revised April 15, 2013	
Subject: Section 6(f) Analysis for Bayview Transportation Improvements Project	

The BTI Project would not affect or use any areas developed or improved with grants authorized under the Land and Water Conservation Fund (LWCF) and, therefore, would not have a Section 6(f) effect.

Research was conducted to document impacts to determine if any existing parklands immediately adjacent to the project alignment had been improved with LWCF from the Department of Interior (DOI). The research, in the sections below, outlines the LWCF grant history within the Candlestick Point State Recreation Area (CPSRA). Research confirms that the BTI Project would not affect parcels subject to LWCF jurisdiction. Land exchanges being conducted as part of the Candlestick Point – Hunters Point Shipyard (CP-HPS) Phase II Redevelopment Plan will affect LWCF lands within the CPSRA.

LWCF Grant History within CPSRA

Between 1979 and 1981, three LWCF grants were made to the State of California for recreational development involving 35 acres, plus a utility corridor, within the 170-acre CPSRA.

- In 1979, CPSRA Development I (LWCF Project #06-00711) approved development of picnic areas, fishing facilities, trails, and support facilities on approximately 22 acres within the CPSRA
- In 1980, CPSRA Development II (LWCF Project #06-00871) approved construction of a water main, sewer and electric lines, and area lighting within the CPSRA
- In 1981, CPSRA Development III (LWCF Project #06-00903) approved development of hiking and biking trails, picnic areas, fishing pier, parking area, and planting and support facilities on approximately 13 acres within the CPSRA

Documentation of each approved LWCF-assisted project can be found in Attachment A and a map illustrating the 6(f) areas can be found in Attachment B of this memorandum.

BTI Project and LWCF Lands

Though the CP-HPS project proposes land exchanges that involve LWCF lands, such lands are located outside the BTI Project Area (mostly in the developed portions of the CPSRA west of Hunter's Point Expressway). Thus, the BTI Project would not affect or use any LWCF lands (see description in the following section). The BTI proposes transportation improvements along Harney Way, Jamestown Avenue, Gilman Avenue, Donahue Street, and Egbert Avenue, all of which are adjacent to LWCF lands. These improvements would take place within the public rights-of-way. No land improved or developed with LWCF grants would be converted to a non-recreational use by the BTI Project and no replacement lands are necessary. Therefore, the BTI Project would not affect or use any land in LWCF areas.

CP-HPS Project and LWCF Lands

Two LWCF parcels totaling 3.54+/- acres of lands are being considered for exchange as part of the CP-HPS project and, if exchanged, will be converted to uses other than public outdoor recreation (see Figure 1).

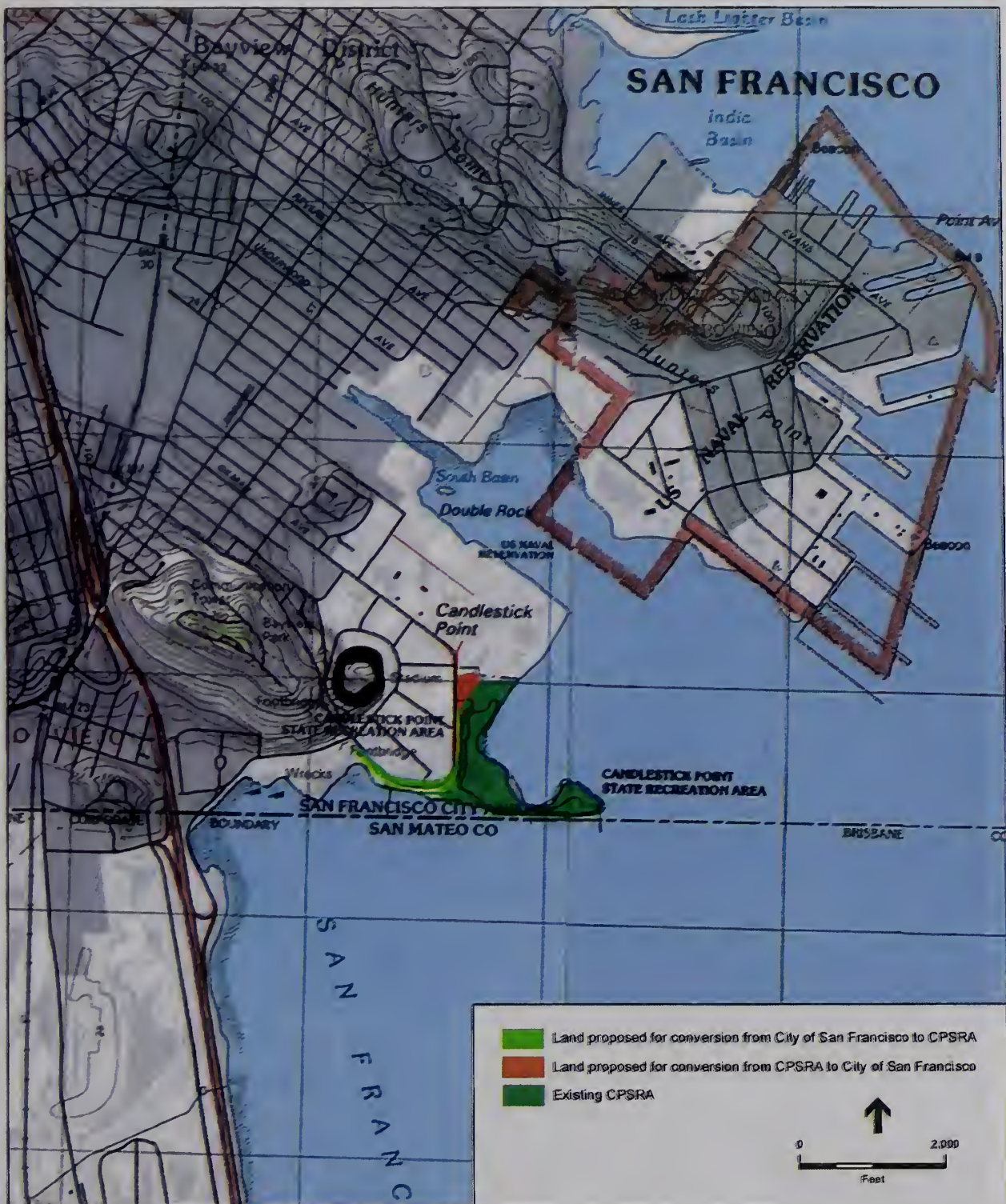
The first is 2.7+/- acres of lands improved under CPSRA Development III (LWCF Project# 06-00903). These lands are part of a CPSRA parking area and a grassy area near the Park's present Donner Avenue entrance (see Figure 2). This grassy area is far removed from the shoreline and includes a paved parking area and an adjacent grassy area containing non-native grasses of little habitat value.

The other .84+/- acres of the conversion area is a portion of a utility corridor constructed under CPSRA Development II (LWCF Project # 06-00871) This utility corridor provides sewer and water service to areas of the Park that are used for public outdoor recreation, but the corridor land itself does not support such uses (see Figure 2). Rather, it is a part of the CPSRA lands that are used as a parking area for the adjacent Candlestick Park stadium. These lands, including the utility corridor, consist of dirt, gravel and paved parking areas accommodating over 3,000 parking spaces, with no landscape beautification or park facilities and little or no ecological or recreational value.

The CP-HPS project is consulting with the National Park Service regarding the CPSRA lands subject to the LWCF. In accordance with the National Environmental Policy Act (NEPA), a Proposal Description and Environmental Screening Form with a recommendation for a NEPA Categorical Exclusion were prepared by the CP-HPS project and submitted to the California Department of Parks and Recreation. On May 7, 2012, the California Department of Parks and Recreation forwarded the documents to the National Park Service through the California Office of Grants and Local Services for review and approval (see Attachment C).

Sources:

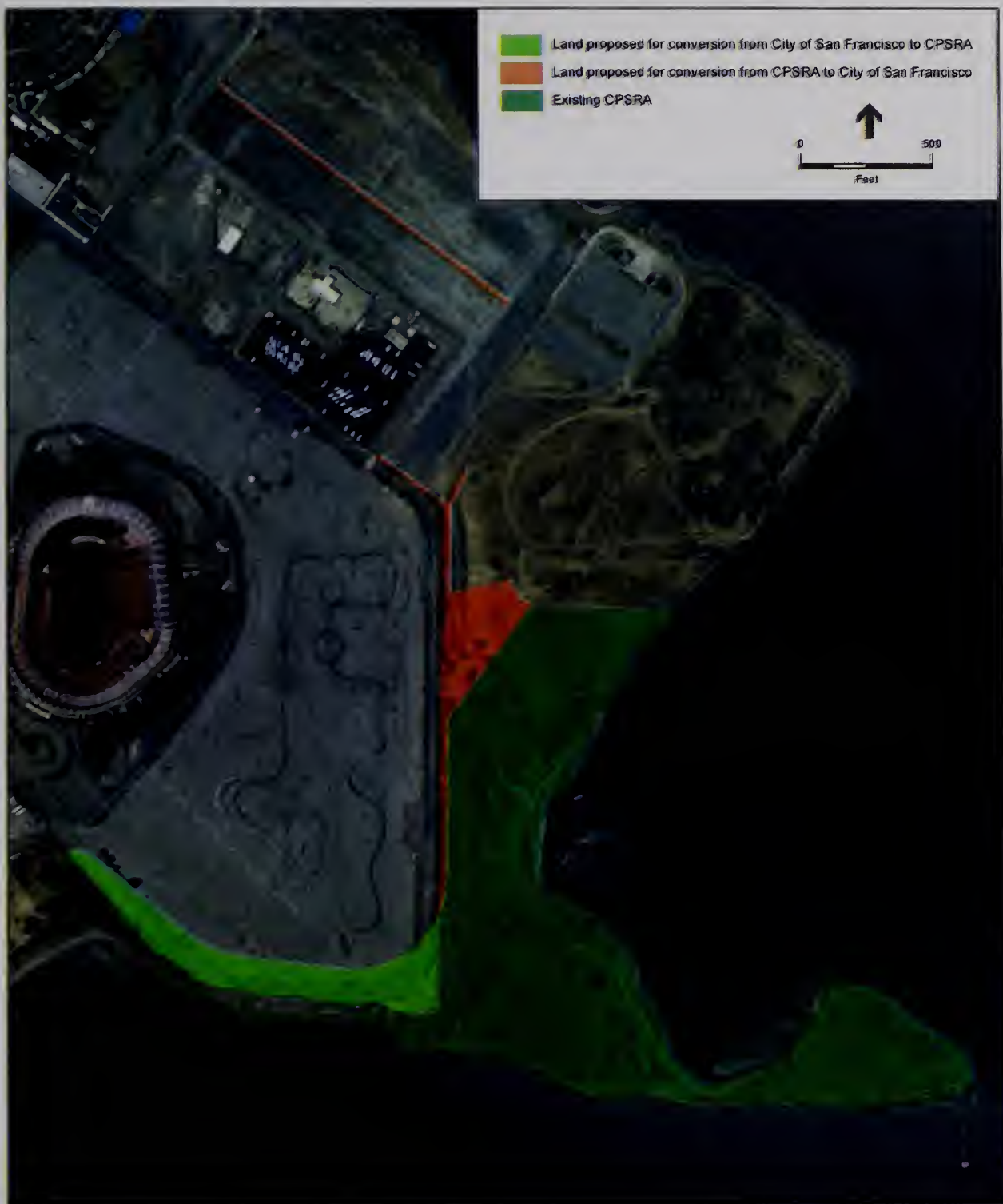
- Public Trust Lands and Candlestick Point State Recreation Area Agreements. Prepared by Lennar Urban and the San Francisco Office of Economic and Workforce Development. June 23, 2011.
- Cultural Resources Inventory Report Prepared for Candlestick Point–Hunters Point Shipyard Redevelopment Land Conversion Project, City of San Francisco, San Francisco County, California. Prepared for City of San Francisco Redevelopment Agency. Prepared by ESA. May 2011.



SOURCE: BMS Design Group, 2011; ESRI, 2009; and ESA, 2011

Candlestick Point/Hunter's Point Land Conversion, 210292

Figure 1
Project Location



SOURCE: BMS Design Group, 2011; Bing Maps, 2009; and ESA, 2011

Candlestick Point/Hunter's Point Land Conversion. 210292

Figure 2
Project APE

Attachment A

Land and Water Conservation Fund Project Agreement

CPSRA Development I (LWCF Project #06-00711)

CPSRA Development II (LWCF Project #06-00871)

CPSRA Development III (LWCF Project #06-00903)



United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
PACIFIC SOUTHWEST REGION

SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO: G26 06-00711

MAR 20 1979

DATE RECEIVED

MAR 21 1979 LMH

RECREATION AND LOCAL SERVICES

Mr. Russell W. Cahill, Director
Department of Parks and Recreation
P.O. Box 2390
Sacramento, California 95811

Dear Mr. Cahill:

Your request for Land and Water Conservation Fund assistance for California project 06-00711, Candlestick Point S.R.A. Development, has been approved. Up to \$170,180 in assistance is now available. A signed copy of the project agreement is enclosed for your files.

Please note that since this project involves donations of materials and services, it is important that accurate and complete records be kept in accordance with Part 670.1.4B of the HCRS Manual.

Sincerely yours,

Donald M. Christman
for John D. Cherry
Regional Director

Enclosure

UNITED STATES DEPARTMENT OF THE INTERIOR
Heritage Conservation and Recreation Service
Land and Water Conservation Fund Project Agreement

State California	Project Number 06-00711
Project Title Candlestick Point S.R.A. Development	
Project Period Date of approval to 12/31/83	Project Stage Covered by this Agreement Complete

Project Scope (Description of Project)

The State Department of Parks and Recreation will develop picnic areas, fishing facilities, trails, and support facilities on approximately 22 acres within a 170-acre State Recreation Area.

06/075/3290
California/San Francisco/San Francisco

<p>Project Cost</p> <table style="width: 100%;"><tr><td style="width: 80%;">Total Cost</td><td style="width: 20%; text-align: right;">\$ 340,360</td></tr><tr><td>Fund Support not to exceed 50%</td><td></td></tr><tr><td>Fund Amount</td><td style="text-align: right;">\$ 170,180</td></tr><tr><td>Cost of this Stage</td><td style="text-align: right;">\$ 340,360</td></tr><tr><td>Assistance this Stage</td><td style="text-align: right;">\$ 170,180</td></tr></table>	Total Cost	\$ 340,360	Fund Support not to exceed 50%		Fund Amount	\$ 170,180	Cost of this Stage	\$ 340,360	Assistance this Stage	\$ 170,180	<p>The following are hereby incorporated into this agreement:</p> <ol style="list-style-type: none">1. General Provisions (HCRS Manual)2. Project Application and Attachments.3. _____4. _____
Total Cost	\$ 340,360										
Fund Support not to exceed 50%											
Fund Amount	\$ 170,180										
Cost of this Stage	\$ 340,360										
Assistance this Stage	\$ 170,180										

The United States of America, represented by the Director, Heritage Conservation and Recreation Service, United States Department of the Interior, and the State named above (hereinafter referred to as the State), mutually agree to perform this agreement in accordance with the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964), the provisions and conditions of the Heritage Conservation and Recreation Service Manual (Grants-in-Aid Series), and with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps, and assurances attached hereto or retained by the State and hereby made a part hereof.

The United States hereby promises, in consideration of the promises made by the State herein, to obligate to the State the amount of money referred to above, and to tender to the State that portion of the obligation which is required to pay the United States' share of the costs of the above project stage, based upon the above percentage of assistance. The State hereby promises, in consideration of the promises made by the United States herein, to execute the project described above in accordance with the terms of this agreement.

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

In witness whereof, the parties hereto have executed this agreement as of the date entered below.

THE UNITED STATES OF AMERICA
By *James F. Hall*
(Signature)

Heritage Conservation and
Recreation Service
United States Department
of the Interior

Date MAR 7 1979

STATE
California
By *Will Porter*
(Signature)

Russell W. Cahill
(Name)
Director of Parks & Recreation
(Title)

INT 4770-78
U.S. DEPT. OF THE INTERIOR



United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
PACIFIC SOUTHWEST REGION
SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO: 06-00871

JUL 16 1980

Mr. Russell W. Cahill, Director
Department of Parks & Recreation
P.O. Box 2390
Sacramento, California 95811

Dear Mr. Cahill:

Your request for Land and Water Conservation Fund assistance for California project 06-00871, Candlestick Point State Recreation Area, Development II, has been approved. Up to \$583,692 in assistance is now available. A signed copy of the project agreement is enclosed for your files.

Sincerely,

John D. Cherry
Regional Director

Enclosure

DATE RECEIVED
1 JUL 21 1980
RECREATION AND LOCAL SERVICES

UNITED STATES DEPARTMENT OF THE INTERIOR
Heritage Conservation and Recreation Service
Land and Water Conservation Fund Project Agreement

State California	Project Number 06-00 871
Project Title Candlestick Point S.R.A. Development II	
Project Period May 16, 1980 to 6-30-84	Project Stage Covered by this Agreement Complete

Project Scope (Description of Project)

Construction of water mains, force main sewer lines, electric lines, and area lighting.

<p>Project Cost</p> <p>Total Cost, \$ 1,167,384</p> <p>Fund Support not to exceed 50%</p> <p>Fund Amount \$ 583,692</p> <p>Cost of this Stage \$ 1,167,384</p> <p>Contribution this Stage \$ 583,692</p>	<p>The following are hereby incorporated into this agreement:</p> <ol style="list-style-type: none"> 1. General Provisions (HCRS Manual) 2. Project Application and Attachments. 3. _____ 4. _____
--	--

The United States of America, represented by the Director, Heritage Conservation and Recreation Service, United States Department of the Interior, and the State named above (hereinafter referred to as the State), mutually agree to perform this agreement in accordance with the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964), the provisions and conditions of the Heritage Conservation and Recreation Service Manual (Grants-in-Aid Series), and with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps, and assurances attached hereto or retained by the State and hereby made a part hereof.

The United States hereby promises, in consideration of the promises made by the State herein, to obligate to the State the amount of money referred to above, and to tender to the State that portion of the obligation which is required to pay the United States' share of the costs of the above project stage, based upon the above percentage of assistance. The State hereby promises, in consideration of the promises made by the United States herein, to execute the project described above in accordance with the terms of this agreement.

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

In witness whereof, the parties hereto have executed this agreement as of the date entered below.

THE UNITED STATES OF AMERICA

By

James R. McAllister

(Signature)

Heritage Conservation and
Recreation Service
United States Department
of the Interior

Date

7/1/80

STATE

California

By

Russell W. Cahill

(Signature)

Russell W. Cahill

(Name)

Director, Dept. of Parks & Recreation

(Title)



United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
PACIFIC SOUTHWEST REGION
SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO: 06-00903

JAN 30 1981

Mr. Pete Dangermond, Jr.
Director
Department of Parks & Recreation
P.O. Box 2390
Sacramento, California 95811

Dear Mr. Dangermond:

Your request for Land and Water Conservation Fund assistance for California Project 06-00903, Candlestick Point State Recreation Area, Development III, has been approved. Up to \$783,074 in assistance is now available. A signed copy of the project agreement is enclosed for your files.

Sincerely,

John D. Cherry
Regional Director

Enclosure

DATE RECEIVED
FEB 5 1981
RECREATION AND LOCAL SERVICES

UNITED STATES DEPARTMENT OF THE INTERIOR
Heritage Conservation and Recreation Service
Land and Water Conservation Fund Project Agreement

State California	Project Number 06-00903
Project Title Candlestick Point S.R.A. Development III	
Project Period Dec. 31, 1980 to June 30, 1985	Project Stage Covered by this Agreement Complete

Project Scope (Description of Project)

Development of hiking and biking trails, picnic areas, fishing pier, parking area, planting and support facilities.

<p>Project Cost</p> <p>Total Cost, \$ 2,489,170.94</p> <p>Fund Support not to exceed 50%</p> <p>Fund Amount \$ 783,074.00</p> <p>Cost of this Stage \$ 2,489,170.94</p> <p>Assistance this Stage \$ 783,074.00</p>	<p>The following are hereby incorporated into this agreement:</p> <ol style="list-style-type: none"> 1. General Provisions (HCRS Manual) 2. Project Application and Attachments. 3. _____ 4. _____
---	--

The United States of America, represented by the Director, Heritage Conservation and Recreation Service, United States Department of the Interior, and the State named above (hereinafter referred to as the State), mutually agree to perform this agreement in accordance with the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964), the provisions and conditions of the Heritage Conservation and Recreation Service Manual (Grants-in-Aid Series), and with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps, and assurances attached hereto or retained by the State and hereby made a part hereof.

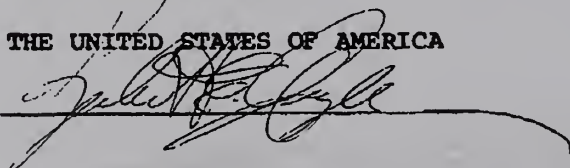
The United States hereby promises, in consideration of the promises made by the State herein, to obligate to the State the amount of money referred to above, and to tender to the State that portion of the obligation which is required to pay the United States' share of the costs of the above project stage, based upon the above percentage of assistance. The State hereby promises, in consideration of the promises made by the United States herein, to execute the project described above in accordance with the terms of this agreement.

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

In witness whereof, the parties hereto have executed this agreement as of the date entered below.

THE UNITED STATES OF AMERICA

By



(Signature)

Heritage Conservation and
Recreation Service
United States Department
of the Interior

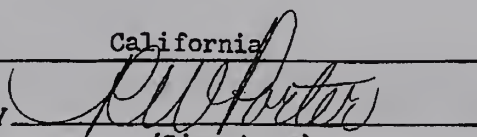
Date

1/15/81

STATE

California

By



(Signature)

Pete Dangermond, Jr.

(Name)

Director, Parks and Recreation Dept.

(Title)

Attachment B

Candlestick Point State Recreational Land and Water Conservation und Boundary
Determination Letter from National Park Service, dated March 29, 2010



United States Department of the Interior

NATIONAL PARK SERVICE

Pacific West Region
1111 Jackson Street, Suite 700
Oakland, California 94607-4807



IN REPLY REFER TO:
L2623 (PWR-PR)

March 29, 2010

Barbara Baker, LWCF Supervisor
Office of Grants and Local Services
California Department of Parks and Recreation
PO Box 942896
Sacramento, CA 94296-0001

Re: Determination of LWCF §6(f)(3) protected area; LWCF Nos. 06-00711; 06-00871; 06-00903 -
Candlestick Point State Recreation Area

Dear Barbara:

Thank you for your letter of March 22, 2010 by which you have requested NPS concurrence in your determination that the §6(f)(3) protected area of Candlestick Point State Recreation Area amounts to the originally developed 35 acre southern portion of the park, plus the utility corridor. Through a process of file investigations, discussions with you, and consultation with our policy office and the Department of the Interior Solicitor's Office, we find that we concur in your conclusions as discussed below.

According to the Land and Water Conservation Fund Act (LWCF) §6(f)(3), "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses." This provision of law has consistently been interpreted to mean that it is not just the LWCF assisted development that is protected; rather, it is the entire park area that must be kept in public outdoor recreation use in perpetuity regardless of the level of LWCF assistance received. It has further been maintained that the park area in question must comprise a viable recreation entity. In most cases, this means that an entire park is included within the §6(f)(3) protected boundary. Exceptions to this rule may be allowed when a case is explicitly made that a smaller area represents an independently managed and viable public recreation entity. This usually applies only to very large parks. Viewed from this perspective of law and policy, our first inclination has been to say that the entire State Recreation Area would fall under LWCF §6(f)(3) protection.

We are also bound by past LWCF Grant Agreements, which consist of the Agreement and General Provisions, the Manual in effect at the time of the grant, and the application materials including boundary maps. Because §6(f)(3) boundary maps were not always a required component of grant applications, and because many maps were produced which did not represent the intent of the law, we investigate the project documentation to determine what the viable park area was that received LWCF assistance. As you know, we find many old maps that simply delineate an acquisition parcel or actual LWCF assisted development, that do not represent a viable recreation entity, and therefore do not represent the entire §6(f)(3) protected area.

TAKE PRIDE[®]
IN AMERICA 

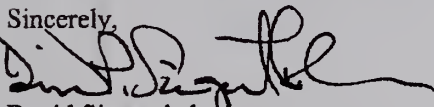
Three LWCF grants were made to the State of California in 1979 and 1980 for recreational development projects within Candlestick Point State Recreation Area. All three grant applications reference the larger 170-175 acre Recreation Area of which the southern portion is to be developed as the "immediate public use area." The State provided a Master Plan for the entire SRA as background material at the time of grant application. All three grant applications are explicit in their intention to develop the southern 35 acre portion of the park as a viable public recreation area, and the area is indicated on the project boundary maps executed at the time. The map for the utility project simply outlined the utility corridor, much of which extended through the northern portion of the park, although it is clear that the purpose was to provide utility service to the 35-acre area.

Since LWCF development assistance funding by law carries the protection provided by §6(f)(3) of the Act, the utility corridor is also within a protected boundary. Although the utility corridor boundary map does not conform to our current policy, we find that the intent to develop the southern 35 acres for public use dictated the delineation of boundaries in the Grant Agreement documentation. The northern portion of the State Recreation Area was not then considered to be in a condition that would support public recreation use.

We therefore concur in your determination that the LWCF §6(f)(3) protected area is the southern 35 acres plus the utility corridor. We understand that the City's statement of the utility corridor acreage was a rough estimate and that it needs to be more precisely determined by ground survey and measurement.

Please feel free to contact me if you have further questions about LWCF boundary issues at Candlestick State Recreation Area. Thank you for your diligence in investigating these issues and responding to our questions regarding your grant documentation.

Sincerely,



David Siegenthaler
LWCF Project Manager

cc: Wayne Strum, NPS, WASO
Michael Linde, NPS LWCF Program Lead, Seattle
Suzanne Boyce Carlson, DOI Field Solicitor's Office

QUIET AREA
• COMFORT STATION
06-00711
PICNIC AREA, FISHING
FACILITIES & TRAILS

MP
MARKING

TRANSIENT POWER PLANT

- GAS STATION FOR SOIL
- BAIT & TACKLE SHOP

DINNER RESTAURANT

- 90 CAR PARKING

FAMILY PICKNICKING

- BENT-ARKE HILLHEAD
- COMFORT STATIONS

CHILDREN'S PLAY AREA

BIRD OBSERVATION OVERLOOK

100

100

FISHING PIER →
ING SHORELINE
CULTURAL PROGRAM CENTER
• PARK ADMINISTRATION
AMPHITHEATER

↑
CONTACT STATION
• BUS STOP
PROJECT
A 06-00871
SEWER LINES
WATER LINES
AREA LIGHTING

A hand-drawn map of a trail system. The map shows a trail starting from a 'TRAIL' label, passing a 'DAY PAPER' marker, and ending at a 'TRAIL' label. A 'G TRAIL' label is also present. A scale bar indicates distances from 0 to 60 feet. A north arrow is shown. The map is labeled 'JANESTOWN' and 'SCALE IN FEET'.

AGING AREA _____
COMFORT STATION _____

PICNIC AREA _____
(capped facilities available)

LEGEND

- AREA BOUNDARY
- DEVELOPED USE AREAS
- BUILDINGS
- ROADS/PARKING
- SAND BEACH
- BOAT DOCKING

IER, PARKIN

A map of the Community Gardens area. The map shows several streets: 22nd Ave, 23rd Ave, 24th Ave, 25th Ave, 26th Ave, 27th Ave, 28th Ave, 29th Ave, 30th Ave, 31st Ave, 32nd Ave, 33rd Ave, 34th Ave, 35th Ave, 36th Ave, 37th Ave, 38th Ave, 39th Ave, 40th Ave, 41st Ave, 42nd Ave, 43rd Ave, 44th Ave, 45th Ave, 46th Ave, 47th Ave, 48th Ave, 49th Ave, 50th Ave, 51st Ave, 52nd Ave, 53rd Ave, 54th Ave, 55th Ave, 56th Ave, 57th Ave, 58th Ave, 59th Ave, 60th Ave, 61st Ave, 62nd Ave, 63rd Ave, 64th Ave, 65th Ave, 66th Ave, 67th Ave, 68th Ave, 69th Ave, 70th Ave, 71st Ave, 72nd Ave, 73rd Ave, 74th Ave, 75th Ave, 76th Ave, 77th Ave, 78th Ave, 79th Ave, 80th Ave, 81st Ave, 82nd Ave, 83rd Ave, 84th Ave, 85th Ave, 86th Ave, 87th Ave, 88th Ave, 89th Ave, 90th Ave, 91st Ave, 92nd Ave, 93rd Ave, 94th Ave, 95th Ave, 96th Ave, 97th Ave, 98th Ave, 99th Ave, 100th Ave. The map also shows the locations of Community Gardens and Comfort Station. A legend indicates that the bus stop is marked with a circle and the text 'BUS STOP'.

Attachment C

Submittal Letter from California Department of Parks and Recreation, dated May 7, 2012



DEPARTMENT OF PARKS AND RECREATION • P.O. Box 942896 • Sacramento, CA 94296-0001
Acquisition and Development Division
One Capitol Mall, Suite 410
Sacramento, California 95814

Ruth Coleman, *Director*

May 7, 2012

Ms. Barbara S. Baker
Acting Chief, Office of Grants and Local Services
Department of Parks and Recreation
1416 9th Street, Suite 918
Sacramento, CA 95814

Subject: Candlestick Point State Recreational Area Conversion Proposal
LWCF Fund Project Agreements Numbers 06-00711, 06-00871, 06-00903

Dear Ms. Baker,

California Department of Parks and Recreation (DPR) requests permission for the conversion of approximately 3.7 acres of land within the Candlestick Point State Recreation Area (CPSRA) currently subject to Land and Water Conservation Fund (LWCF) Section 6(f)(3) requirements, and replacement of that land with approximately 4.9 acres of land directly adjacent to the CPSRA.

Over the past years, DPR has met on several occasions with your staff along with the National Park Service (NPS)-LWCF Manager to discuss the details of this CPSRA Conversion Proposal. In the course of these meetings, DPR and NPS agreed on the size of the Section 6(f)(3) park land impacted and the suitability of the replacement property as noted in the enclosed CPSRA Conversion Proposal.

DPR makes this request in order to implement a reconfiguration of the CPSRA as specifically authorized by the California Legislature that will enrich the environment and facilities of the park itself. The reconfiguration, in turn, will advance the Hunters Point Shipyard/Candlestick Point Redevelopment Project (Redevelopment Project), one of the largest and most important redevelopment projects in the state, undertaken by the San Francisco Redevelopment Agency (Agency) and its successor, City and County of San Francisco. In 2009, the California Legislature enacted SB 792 (Leno) in order to facilitate the Redevelopment Project and improve the CPSRA. To this end, SB 792 authorizes the State Lands Commission and DPR to enter into land exchange agreements with the Agency whereby DPR and State Lands will convey certain lands within the CPSRA to the Agency or its successor, in exchange for other lands to be added to the CPSRA and \$50 million compensation for the operation, maintenance, and improvement of the state park.

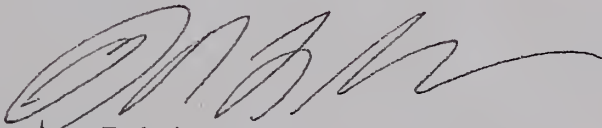
Ms. Barbara S. Baker
May 7, 2012
Page 2

Some of the property the Agency seeks to acquire is subject to LWCF restrictions. Therefore, DPR seeks approval from the US Department of Interior to convert approximately 3.7 acres of LWCF protected land and replace that land with approximately 4.9 acres of land currently owned by the City and County of San Francisco. The replacement property is directly adjacent to the existing CPSRA and will enhance the usefulness of CPSRA, as explained in the enclosed CPSRA Conversion Proposal.

With this letter, we are submitting the LWCF Proposal Description and Environmental Screening Form (PD/ESF) for the CPSRA Conversion Proposal for NPS and your review and approval and the subsequent amendments to our project agreements.

If you have any questions regarding the enclosed CPSRA Conversion Proposal, please do not hesitate to contact Laura Wilson, Land Agent at (916) 445-5582 or lwilson@parks.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'SRL', with a long horizontal flourish extending to the right.

Stephen R. Lehman
Deputy Director

Enclosures

cc: Laura Wilson, Land Agent, Acquisition and Real Property Services Division

2 Bay Trail



Bay Trail

Paved

Dirt/Gravel

On Street

Planned

Other Trail

Existing

Planned

see map 3

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR

P.O. Box 942873, MS-49

SACRAMENTO, CA 94273-0001

PHONE (916) 654-5266

FAX (916) 654-6608

TTY 711

*"Flex your power!"
Be energy efficient!"*

July 20, 2010

**TITLE VI
POLICY STATEMENT**

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, or age, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Charles Wahnnon, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353 or toll free 1-866-810-6346 (voice), TTY 711, fax (916) 324-1869, or via email: charles_wahnnon@dot.ca.gov.

Cindy McKim
CINDY MCKIM
Director

Appendix C

USFWS Species List and CNDDDB Report

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 130401024057

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Euphydryas editha bayensis*
 - bay checkerspot butterfly (T)
 - Critical habitat, bay checkerspot butterfly (X)
- Haliotes cracherodii*
 - black abalone (E) (NMFS)
- Haliotes sorenseni*
 - white abalone (E) (NMFS)
- Icaricia icarioides missionensis*
 - mission blue butterfly (E)
- Speyeria callippe callippe*
 - callippe silverspot butterfly (E)
- Speyeria zerene myrtleae*
 - Myrtle's silverspot butterfly (E)

Fish

- Acipenser medirostris*
 - green sturgeon (T) (NMFS)
- Eucyclogobius newberryi*
 - tidewater goby (E)
- Hypomesus transpacificus*
 - delta smelt (T)
- Oncorhynchus kisutch*
 - coho salmon - central CA coast (E) (NMFS)
- Oncorhynchus mykiss*
 - Central California Coastal steelhead (T) (NMFS)
 - Central Valley steelhead (T) (NMFS)
 - Critical habitat, Central California coastal steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
 - Central Valley spring-run chinook salmon (T) (NMFS)
 - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Rana draytonii*
 - California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Reptiles

Caretta caretta

loggerhead turtle (T) (NMFS)

Chelonia mydas (*incl. agassizi*)

green turtle (T) (NMFS)

Dermochelys coriacea

leatherback turtle (E) (NMFS)

Lepidochelys olivacea

olive (=Pacific) ridley sea turtle (T) (NMFS)

Thamnophis sirtalis tetrataenia

San Francisco garter snake (E)

Birds

Brachyramphus marmoratus

marbled murrelet (T)

Charadrius alexandrinus nivosus

western snowy plover (T)

Diomedea albatrus

short-tailed albatross (E)

Pelecanus occidentalis californicus

California brown pelican (E)

Rallus longirostris obsoletus

California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Arctocephalus townsendi

Guadalupe fur seal (T) (NMFS)

Balaenoptera borealis

sei whale (E) (NMFS)

Balaenoptera musculus

blue whale (E) (NMFS)

Balaenoptera physalus

finback (=fin) whale (E) (NMFS)

Enhydra lutris nereis

southern sea otter (T)

Eubalaena (=Balaena) glacialis

right whale (E) (NMFS)

Eumetopias jubatus

Steller (=northern) sea-lion (T) (NMFS)

Physeter catodon (=macrocephalus)

sperm whale (E) (NMFS)

Reithrodontomys raviventris

salt marsh harvest mouse (E)

Plants

- Arctostaphylos hookeri* ssp. *ravenii*
Presidio (=Raven's) manzanita (E)
- Chorizanthe robusta* var. *robusta*
robust spineflower (E)
- Layia carnosa*
beach layia (E)
- Lessingia germanorum*
San Francisco lessingia (E)
- Pentachaeta bellidiflora*
white-rayed pentachaeta (E)
- Suaeda californica*
California sea blite (E)
- Trifolium amoenum*
showy Indian clover (E)

Proposed Species

Plants

- Arctostaphylos Franciscana*
Critical Habitat, Franciscan Manzanita (X)

Quads Containing Listed, Proposed or Candidate Species:

HUNTERS POINT (448A)

SAN FRANCISCO SOUTH (448B)

County Lists

No county species lists requested.

Key:

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
- (C) *Candidate* - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.
During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.
- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and

indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 30, 2013.



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Adela oplerella</i>	G2G3 S2S3	None		100 100	14 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	G2? S2?	None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		64 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Arctostaphylos franciscana</i> Franciscan manzanita	G1 S1	None	Rare Plant Rank - 1B.1	700 700	4 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	G1 S1	None	Rare Plant Rank - 1B.1	700 1,000	3 S:3	0	0	0	0	0	3	1	2	3	0	0
<i>Arctostaphylos montana ssp. ravenii</i> Presidio manzanita	G3T1 S1	Endangered	Rare Plant Rank - 1B.1	700 700	7 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Arctostaphylos montanaensis</i> Montara manzanita	G2 S2.2	None	Rare Plant Rank - 1B.2	900 900	4 S:1	0	0	0	0	1	0	1	0	1	0	0
<i>Arctostaphylos pacifica</i> Pacific manzanita	G1 S1	None	Rare Plant Rank - 1B.2	1,045 1,045	1 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-velch	G2T2 S2	None	Rare Plant Rank - 1B.2	50 50	65 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Banksia incredula</i> incredible harvestman	G1 S1	None		1,110 1,110	1 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Caecidotea tomalensis</i> Tomales isopod	G2 S2	None		50 2,100	6 S:2	0	0	1	1	0	0	2	0	2	0	0
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	G4T1 S1	Endangered	XERCES_C1-Critically Imperiled	450 800	10 S:3	0	0	0	0	0	3	2	1	3	0	0
<i>Carex comosa</i> bristly sedge	G5 S2	None	Rare Plant Rank - 2.1	0 0	29 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Charadrius alexandrinus nivosus</i> western snowy plover	G4T3 S2	Threatened	ABC_WLBCC-Watch List of Birds of Conservation Concern CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	5 5	120 S:1	0	0	0	0	0	1	1	0	1	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks							Population Status			Presence	
						A	B	C	D	X	U		Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrap.	Extrap.
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	G2T2 S2.2	None None	Rare Plant Rank - 1B.2	15 350	20 S:7	0	0	0	0	0	4		7	0	7	0	0
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	G2T1 S1	Endangered None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	150 300	22 S:2	0	0	0	0	2	0		2	0	0	2	0
<i>Cicindela hirticollis grävada</i> sandy beach tiger beetle	G5T2 S1	None None		10 10	34 S:1	0	0	0	0	1	0		1	0	0	0	1
<i>Cirsium andrewsii</i> Franciscan thistle	G2 S2.2	None None	Rare Plant Rank - 1B.2	100 100	27 S:1	0	0	0	0	1	0		1	0	0	1	0
<i>Cirsium occidentale</i> var. <i>compactum</i> compact cobwebby thistle	G3G4T2 S2.1	None None	Rare Plant Rank - 1B.2	100 100	14 S:1	0	0	0	0	1	0		1	0	0	1	0
<i>Collinsia multicolor</i> San Francisco collinsia	G2 S2.2	None None	Rare Plant Rank - 1B.2	100 650	25 S:7	0	1	0	0	0	6		6	1	7	0	0
<i>Dufourea stagei</i> Stage's dufourine bee	G1? S1?	None None		700 700	1 S:1	0	0	0	0	0	1		1	0	1	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	40 40	1135 S:2	0	1	0	0	0	0		0	2	2	0	0
<i>Eucyclogobius newberryi</i> tidewater goby	G3 S2S3	Endangered None	AFS_EN-Endangered CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	20 20	117 S:1	0	0	0	0	1	0		1	0	0	0	1
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	G5T1 S1	Threatened None	XERCES_CI-Critically Imperiled	100 1,000	24 S:3	0	0	0	0	3	0		3	0	0	0	3
<i>Fritillaria liliacea</i> fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	300 300	69 S:2	0	0	0	0	1	1		2	0	1	0	1
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	G5T2 S2	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	30 300	111 S:2	0	0	0	0	0	2		2	0	2	0	0
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	G5T2 S2.1	None None	Rare Plant Rank - 1B.1	50 670	29 S:3	0	1	0	0	0	2		2	1	3	0	0



Summary Table Report

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	G5T1Q S1	None None	Rare Plant Rank - 3.2	50 1,000	15 S:8	0	0	1	1	1	5	8	0	7	0	1
<i>Helianthella castanea</i> Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	700 700	97 S:2	0	1	0	0	1	0	1	1	1	1	0
<i>Hemizonia congesta</i> ssp. <i>congesta</i> white seaside tarplant	G5T2T3 S2S3	None None	Rare Plant Rank - 1B.2		33 S:2	0	0	0	0	1	1	2	0	1	1	0
<i>Hespererax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	G4T2T3 S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		36 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	G4T2 S2?	None None	Rare Plant Rank - 1B.1 USFS_S-Sensitive	150 500	38 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Hydroporus leechi</i> Leech's skyline diving beetle	G1? S1?	None None		680 680	13 S:1	0	0	0	0	0	1	1	0	0	1	0
<i>Ischnura gemina</i> San Francisco forktail damselfly	G2 S2	None None	IUCN_VU-Vulnerable	25 540	7 S:2	0	0	0	0	1	1	1	1	1	1	0
<i>Lasiurus cinereus</i> hoary bat	G5 S4?	None None	IUCN_LLC-Least Concern WBWG_M-Medium Priority	20 20	235 S:4	0	0	0	0	0	4	4	0	4	0	0
<i>Laterallus jamaicensis coturniculus</i> California black rail	G4T1 S1	None Threatened	ABC_WLBCC-Watch List of Birds of Conservation Concern BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened USFWS_BCC-Birds of Conservation Concern	25 25	241 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Layia carrosa</i> beach layia	G2 S2	Endangered Endangered	Rare Plant Rank - 1B.1	40 40	22 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Leptosiphon rosaceus</i> rose leptosiphon	G1 S1	None None	Rare Plant Rank - 1B.1		25 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Lessingia germanorum</i> San Francisco lessingia	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1	150 500	5 S:2	0	0	1	0	1	0	1	1	1	1	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence	
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrap.
<i>Lichnanthe ursina</i> bumblebee scarab beetle	G2 S2	None None		15 20	8 S:2	0	0	0	0	0	2	2	0	2	0
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	G2Q S2.2	None None	Rare Plant Rank - 1B.2	700 700	21 S:1	0	0	0	0	0	1	1	0	1	0
<i>Melospiza melodia pusillula</i> Alameda song sparrow	G5T2? S2?	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	10 25	38 S:3	0	0	0	0	0	3	3	0	3	0
<i>Myiopharodon conocephalus</i> hardhead	G3 S3	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	20 20	32 S:1	0	0	0	0	0	1	1	0	1	0
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1	500 500	14 S:1	0	0	0	0	1	0	1	0	0	1
<i>Phalacrocorax auritus</i> double-crested cormorant	G5 S3	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	45 75	37 S:2	0	0	0	0	0	0	0	2	2	0
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	G5T1 S1	Endangered None	XERCES_CI-Critically Imperiled	200 750	14 S:12	0	2	1	0	1	8	2	10	12	0
<i>Polygonum marinense</i> Marin knotweed	G2Q S2	None None	Rare Plant Rank - 3.1		32 S:1	0	0	0	0	0	1	1	0	1	0
<i>Rallus longirostris obsoletus</i> California clapper rail	G5T1 S1	Endangered Endangered	ABC_WLBCC-Watch List of Birds of Conservation Concern CDFW_FP-Fully Protected	0 7	92 S:4	0	0	0	0	0	1	1	3	4	0
<i>Rana draytonii</i> California red-legged frog	G4T2T3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	5 600	1327 S:6	1	2	1	0	0	2	2	4	6	0
<i>Riparia riparia</i> bank swallow	G5 S2S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	10 40	282 S:3	0	1	0	0	0	2	2	1	3	0
<i>Sanicula maritima</i> adobe sanicle	G2 S2.2	None Rare	Rare Plant Rank - 1B.1 USFS_S-Sensitive	250 250	16 S:1	0	0	0	0	1	0	1	0	0	1
<i>Silene verecunda ssp. verecunda</i> San Francisco campion	G5T2 S2.2	None None	Rare Plant Rank - 1B.2	400 1,200	12 S:2	0	0	0	0	0	2	1	1	2	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence	
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrap.
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	G5T1 S1	Endangered None	XERCES_C-Critically Imperiled	400 900	6 S:5	0	1	0	0	0	4	1	4	5	0
<i>Suaeda californica</i> California seabite	G1 S1	Endangered None	Rare Plant Rank - 1B.1	0 5	17 S:2	0	0	0	0	1	1	1	1	1	0
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	G5T2 S2	Endangered Endangered	CDFW_FP-Fully Protected	10 350	38 S:2	1	0	0	1	0	0	0	2	2	0
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	G1 S1	None None		200 200	2 S:1	0	0	0	0	0	1	1	0	1	0
<i>Tritolium amoenum</i> showy rancharia clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1		26 S:1	0	0	0	0	0	1	1	0	1	0
<i>Triphysaria floribunda</i> San Francisco owl's-clover	G2 S2.2	None None	Rare Plant Rank - 1B.2	100 125	41 S:5	0	0	0	0	2	3	5	0	3	1
<i>Triquetrella californica</i> coastal triquetrella	G1 S1	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	600 600	11 S:1	0	0	0	0	0	1	0	1	1	0
<i>Tryonia initiator</i> mimic tryonia (=California brackishwater snail)	G2G3 S2S3	None None	IUCN_DD-Data Deficient	0 0	39 S:1	0	0	0	0	1	0	1	0	0	0

Appendix D

Acronyms and Abbreviations

APPENDIX D—ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/m ³	microgram per cubic meter
AAC	Ad-hoc Advisory Committee
AADT	Annual Average Daily Traffic
ABAG	Association of Bay Area Governments
AC Transit	Alameda Contra Costa Transit District
ADA	Americans with Disabilities Act
ADMP	Asbestos Dust Mitigation Plan
APE	area of potential effect
AQCTF	MTC Air Quality Conformity Task Force
ARB	California Air Resources Board
AASHTO	American Association of State Highway and Transportation Officials
ASR	Archaeological Survey Report
ATCM	Airborne Toxic Control Measure
AWSS	auxiliary water supply system
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Bay Area	San Francisco Bay Area
BCDC	Bay Conservation and Development Commission
bgs	below ground surface
BMPs	best management practices
BRT	bus rapid transit
BSA	biological study area
BTI Project	Bayview Transportation Improvements Project
BVHP PAC	Bayview Hunters Point Project Area Committee
CAA	Clean Air Act
CAC	Citizens Advisory Committee
CalEPA	California Environmental Protection Agency
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulation

CGS	California Geologic Survey
CIA	Community Impact Assessment
CIWMB	California Integrated Waste Management Board
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO Protocol	California Project-Level Carbon Monoxide Protocol
COCs	constituents of concerns
CP-HPS Plan	Candlestick Point–Hunters Point Shipyard Phase II Redevelopment Plan
CPSRA	Candlestick Point State Recreation Area
CSO	Combined Sewer Outflows
CSS	combined sewer system(s)
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
dB	decibels
dBA	A-weighted decibels
DCP	dust control plan
DDA	Disposition and Development Agreement
Department	California Department of Transportation
DPM	diesel particulate matter
DSA	Disturbed Soil Area
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	federal Endangered Species Act
ESLs	Environmental Screening Levels
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRMS	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FTIPs	Federal Transportation Improvement Programs
H ₂ S	hydrogen sulfide
HCM	Highway Capacity Manual
HEPA	High-Efficiency Particulate Air
HPS	Hunters Point Shipyard
HPS CAC	HPS Citizens Advisory Committee

HPSR	Historic Property Survey Report
HPTP	Historic Properties Treatment Plan
HPX	Hunters Point Express
HRER	Historical Resources Evaluation Report
I-280	Interstate 280
IAC	Interagency Consultation
ICs	institutional controls
ISA	Initial Site Assessment
ISTEA	Intermodal Surface Transportation Efficiency Act
ksf	thousand square feet
LCPs	local coastal programs
LEDPA	least environmentally damaging practicable alternative
LID	Low Impact Design
LOS	levels of service
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
mph	mile(s) per hour
MPO	Metropolitan Planning Organization
MS4s	municipal separate storm sewer systems
MSATs	mobile source air toxics
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
NAAQS	National Ambient Air Quality Standards
NAC	noise abatement criteria
NADR	Noise Abatement Decisions Report
NAHC	Native American Heritage Commission
NEPA	National Environmental Quality Act
NES	Natural Environment Study
NES-MI	Natural Environment Study-Minimal Impacts
NFL	National Football League
NHPA	National Historic Preservation Act of 1966, as amended
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOA	naturally occurring asbestos
NOA	Notice of Availability
NOAA Fisheries Service	National Oceanic and Atmospheric Administration's National Marine Fisheries Service

NOI	notice of intent
NOP	notice of preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPWWF	North Point Wet Weather Facility
NRHP	National Register of Historic Places
NSR	Noise Study Report
NWIC	Northwest Information Center
O ₃	ozone
OCS	overhead contact system, also known as catenary wires or trolley lines
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Act
PA	Programmatic Agreement
PAHs	polynuclear aromatic hydrocarbon compounds
Pb	lead
PCBs	polychlorinated biphenyls
Peninsula	San Francisco Peninsula
PG&E	Pacific Gas & Electric Company
PID	Project Initiation Document
PM	particulate matter
PM ₁₀	particles of 10 microns or smaller
PM _{2.5}	particles of 2.5 microns and smaller
PMMS	Pavement Management and Mapping System
POAQC	Project(s) of Air Quality Concern
ppm	parts per million
Protocol	Caltrans Traffic Noise Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects
RAP	Relocation Assistance Program
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
ROW	right-of-way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
RWS	Regional Water System
SAA	streambed alteration agreement
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SamTrans	San Mateo County Transit District

SCP	Stormwater Control Plan
SDG	Stormwater Design Guidelines
SEWPCP	Southeast Water Pollution Control Plant
SF CAC	San Francisco Citizens Advisory Committee
SFBAAB	San Francisco Bay Area Air Basin
SF-CHAMP	San Francisco Chained Activity Modeling Process
SFCTA	San Francisco County Transportation Authority
SFDPH	San Francisco Department of Public Health
SFDPW	San Francisco Department of Public Works
SFFD	San Francisco Fire Department
SFHAs	Special Flood Hazard Areas
SFMTA	San Francisco Municipal Transportation Agency
SFPD	San Francisco Police Department
SFPUC	San Francisco Public Utilities Commission
SFRA	San Francisco Redevelopment Agency
SFRPD	San Francisco Recreation and Park Department
SFRWQCB	The San Francisco Bay RWQCB
SFSD	San Francisco Sheriff's Department
SFSU	San Francisco State University
SHPO	State Historic Preservation Officer
SHS	state highway system
SIP	State Implementation Plan
SLC	State Lands Commission
SO ₂	sulfur dioxide
SSWS	separate storm sewer systems
SVOCs	semi-volatile organic compounds
SWDR	Storm Water Data Report
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCMs	Transportation Control Measures
TCRAs	time-critical removal actions
TDM	Transportation Demand Management
TeNS	Technical Noise Supplement
TIFIA	federal Transportation Infrastructure Finance and Innovation Act
TIP	Transportation Improvement Program
TIS	Transportation Impact Study
TMDLs	total maximum daily loads
TMP	Traffic Management Program
TMP	transportation management plan
TNM 2.5	Traffic Noise Model Version 2.5
TPS	transit preferential street

TSCA	Toxic Substances Control Act
TSM	Transportation System Management
UCSF	University of California, San Francisco
US 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USGS	United States Geological Survey
USTs	underground storage tanks
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WDRs	Waste Discharge Requirements
WPCP	Water Pollution Control Plan
WQA	Water Quality Assessment
XPI	Extended Phase I

Appendix E Avoidance, Minimization, and/or Mitigation Measure Summary

MITIGATION MONITORING and REPORTING RECORD
(MMRR)
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Bayview Transportation Improvements Project
Federal Aid #HP21L-5934 (115)

Task and Brief Description	Ref.	Responsible Branch / Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed Initial / Date	Remarks	Environmental Compliance Initial / Date
DESIGN KICK-OFF		Proj Mgmt & Proj Dev	Beginning of 1 phase					
ENVIRONMENTAL PS&E REVIEW		Proj Mgmt & Environmental	District PS&E Circ					
PRECONSTRUCTION MEETING		Proj Eng	Contract Award					
Transfer Resident Engineer Book		Proj Mgmt & Const	Preconst Meeting					
PREJOB MEETING		Proj Mgmt & Const	Const					
ENVIRONMENTAL COMPLIANCE REVIEW		Proj Mgmt & Const	Safety Review					
DESIGN FEATURES MEMORANDUM		Proj Mgmt & Const	Post Const					
Land Use	ED, page 2.1-24 - 2.1-25	CPW Project Manager/Contractor	Construction	N				
• During construction, the contractor shall provide or secure access for parking to operators, including, but not limited to, emergency services, as appropriate for the project.								
• Representative. This would include limiting the working hours to between 8 a.m. to 5 p.m., if required, and access to CPSRA via the Henry Way Parking lot will be maintained at all times, will be coordinated with State Parks, and in the event access to CPSRA is interrupted to accommodate construction, the contractor will be required to provide alternative vehicular, bicycle, and pedestrian access. The City (State Department of Public Works or DPW) will also assign a public information officer to the BTT Project who will work with the community to reduce any of the construction impacts of the BTT Project.								
• The temporary construction zone(s) will be fenced to ensure the exclusion and safety of park visitors.								
• In the event that any inadvertent damage occurs to the parklands or facilities at CPSRA, the damage will be restored to the condition that existed prior to the construction activities of the project.								
• Prior to construction, the City will coordinate with State Parks to ensure provision of access to pedestrians, bicyclists, and equestrians in the East Port area of the CPSRA. This may include but is not limited to trail detours and signage to route park users to alternate unpaved trails and to the Bay Trail along the shoreline as well as other available parking. The City will also relocate the picnic table and windscreen to another suitable area of CPSRA as specified by State Parks.	ED, page 2.1-25	CPW Project Manager/Contractor	Construction	N				
• Prior to construction, the City will coordinate with State Parks to ensure provision of adequate parking in the Last Port area of the CPSRA including the permanent expansion of the existing parking lot to the south, west, and east, to provide an equivalent parking area if necessary, signage during construction will direct drivers to additional parking available along Jamestown Avenue, Hunters Point Expressway, or to the Donner Avenue CPSRA lot.								
Community	ED, page 2.1-38	CPW Project Manager/CPW Head	PS&E	N				
The City will preserve the rights and provide the services required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.								
UTILITIES	ED, page 2.1-46	CPW Project Manager/Contractor	PS&E, Construction, Final Design	N				
Design, construction, and inspection of utilities added, enlarged, or relocated for the Blvd Alternative would be done in accordance with the City's requirements. When feasible, utility relocations or installations would be undertaken in advance of BTT Project construction. The City would coordinate with affected public service providers in each instance to ensure that work is done in accordance with the appropriate requirements and criteria. In addition, coordination with the utility providers would be initiated during the preliminary engineering phase of the BTT Project and would continue through final design and construction. Coordination efforts would plan utility routes during construction, identify potential conflicts, ensure that construction of the BTT Project minimizes disruption to utility operations, and develop strategies for overcoming problems that may arise. No major utility infrastructure of (e.g., electrical lines or pump/electrical substations) would be affected (1/2012). Nonetheless, the potential exists for construction activities to encroach on unexpected utilities within the area of roadway improvements. In addition, utility relocations may require short-term, limited interruptions of service. No interference to existing utility services is anticipated during the realignment of the overhead power distribution lines because PS&E would put customer loads or alternate lines until the connections are reestablished. If unexpected underground utilities are encountered, the construction contractor would coordinate with the utility provider to develop plans to address the utility conflict, protect the utility if needed, and limit service interruptions. Any short-term, limited service interruptions of known utilities would be scheduled well in advance and appropriate notification would be provided to users.	ED, page 2.1-46	CPW Project Manager/Contractor	Final Design, Construction	N				
• The City will coordinate with the utility providers to ensure that work of emergency services providers, similar to utility providers, coordination with the emergency services providers would be initiated during the preliminary engineering phase of the project and would continue through final design and construction. Coordination efforts would identify potential conflicts, ensure that construction of the project minimizes disruption to emergency service providers, and formulate strategies for overcoming problems that may arise.								
TRAFFIC								

Task and Brief Description	Ref.	Responsible Branch / Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Completed		Remarks	Environmental Compliance	
						Initial Date	Date		Initial	Date
The phasing plan for the BTI Project provided by the Project Team was developed based on discussions with City agencies and is consistent with the phasing plan provided for the CP-HPS Plan • Phase A, which is proposed to take place between 2013 and 2014 would focus on Cargo Way and Jennings Street • Phase B, which is proposed to take place between 2013 and 2021, would focus on the HPS area • Phase C, which would occur between 2013 and 2015, 2018 and 2019, and 2021, would focus on Bancroft Avenue, Ingalls Street and Griffith Street. • Phase D, which would take place between 2013 and 2015, 2018 and 2020, would focus around the Hunters Point Transit Center • Phase E, which would occur between 2014 and 2015, and 2021 and 2027, would focus around the Candlestick Point area • Phase F, which would take place between 2014 and 2015, and 2021 and 2027, would focus on Harvey Way near the City of Brisbane/City of San Francisco border • Phase G, which would take place between 2015 and 2017, would focus on the more northern part of the project, along Cesar Chavez Street, Evans Avenue, and Illinois Street.	ED, page 21-67 - 21-68	DWP Project Manager, DPW Construction Contractor	PBAE, Construction	N						
The BTI Project was designed to be consistent with the San Francisco Better Streets Plan (San Francisco Planning Department, June 2008, adopted January 2011). The Better Streets Plan does not focus on specific neighborhoods in the city, nor does it describe individual projects. Instead, it develops "concepts" for the City's different street typologies and presents specific design guidelines based upon a street's ideal function. The Better Streets Plan articulates a set of goals for San Francisco's streets that emphasize accessibility, connectivity, safety, sustainability, public health, aesthetics, diversity, and preservation of San Francisco's history. The BTI Project and its constituent features will be designed to be compliant with all ADA regulations. Several features have been included which contribute to the safety of road users and pedestrians; these include sidewalk bulb-outs at corners and bus stops, traffic signals, street lighting, new ADA curb ramps, and traffic calming features.	ED, page 21-68	DWP Project Manager, DPW Project Engineer	PBAE Final Design	N						
The Board of Supervisors in August 2009. The San Francisco Bicycle Plan identifies near-term improvements that could be implemented within the next five years, as well as policy goals, objectives and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco. Funds for Bicycle Plan improvements are available from the State Bicycle Transportation Account and San Francisco Measure C funding. SFMTA or SFPDP under the direction of SFMTA or SFRPD), would implement improvements depending on which entity has jurisdiction. The San Francisco Bicycle Plan includes six short-term projects, which would add bicycle lanes to Cargo Way, Illinois Street, Innes Avenue, Bayshore Boulevard, Cesar Chavez Street, and San Bruno Avenue and three long-term improvements to the Bay Trail in Hunters Point, Jennings Street, and Mendell Street. These improvements would complete the bicycle route network envisioned for the study area in the Bicycle Plan, close network gaps, refine and rationalize the bicycle route networks, and improve safety and the cyclist's experience. Design of these improvements would occur within the context of the bicycle route network, planned development characteristics, and roadway network configuration at the initiation of the design and review process for each improvement. As of August 2011, the San Francisco Planning Department, SFPDW, and SFMTA are in the process of refining designs for the inclusion of bicycle facilities on Cesar Chavez. The long term alternative would retain the current auto/truck lane configuration, and add a Class I bicycle path via a cantilevered trail on the south side of the viaduct that connects Cesar Chavez Street and Evans Avenue. This configuration was assumed in the 2035 No Build and Build Intersection Analysis.	ED, page 21-68 - 21-69	DWP Project Manager, DPW Project Engineer	PBAE Final Design	N						
During final design of the BTI Project, the City will work with the San Francisco Bicycle Coalition to determine the preferred routing of the current Class III bicycle route on Palou Avenue in order to resolve potential circulation issues associated with increased levels of transit on Palou Avenue and adjacent roads during construction. The Construction Traffic Management Program will provide necessary information to various contractors and agencies as to how to maximize the opportunities for complementing construction management measures and to minimize the possibility of conflicting effects on the roadway system, while safely accommodating the traveling public in the area. The program, which sets the process by which construction coordination with the City of San Francisco and Navy shall be carried forward and how the management plan elements should be selected, is described in the TIS (Source TIS Section, pages 117-118). Prior to construction, the construction contractor(s) would meet with SFDPW and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles (e.g., during the concrete pour). The construction contractor would be required to meet the City of San Francisco's Regulations for Working in San Francisco Streets, (the Blue Book), including those regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all city, state and federal codes, rules and regulations. Coordination with this program would help minimize the CP-HPS Plan's construction-related transportation effects, and its contribution to cumulative construction related transportation effects. However, some disruption and increased delays could still occur even with implementation of the Mitigation Measures, and it is possible that construction-related transportation effects on local and regional roadways could still occur.	ED, page 21-69	DWP Project Manager, DPW Construction Contractor	Final Design	N						
The Construction Traffic Management Program shall act as the Traffic Management Plan since the BTI Project largely consists of construction of new roadways or rehabilitation of roadways that serve low traffic volumes.	ED, page 21-70	DWP Project Manager, Construction Contractor	Construction	N						

MITIGATION MONITORING and REPORTING RECORD
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Bayview Transportation Improvements Project
Federal Aid #HP21L-5934 (115)

Task and Brief Description	Ref.	Responsible Branch / Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
						Initial	Date		Initial	Date
The design of retaining walls in the proposed roadway cross sections would avoid potential for visual effects. The BUID Alternative proposes improvements that are consistent with the current surrounding environment. The existing condition is a sloped hillside between the roadway and a private parking lot and would require a retaining wall no higher than the existing height of the slope.	ED, page 2-1-83	EPW Project Manager, EPW Project Engineer	Final Design	Y						
Cultural Resources The next step in the identification process would be an XPI proposal, which would culminate in the eventual XPI report. Based on the findings of this report, a determination of the BUI Project work to affect cultural resources will be reached. If archaeological resources are identified during the XPI phase, the procedures outlined in the HPTP would be followed. If no resources are found and will be followed. The HPTP also includes provisions for accidental discovery, as specified below: • If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. • If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to contain remains, and the County Coroner will be notified. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify NADIC who will then notify the Most Likely Descendant (MLD). At this time, the person who discovered the remains will contact the City so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable. The City shall follow the process outlined in the HPTP for data dissemination, disposition of materials and records, and treatment of properties discovered during implementation of the proposed BUI Project and as outlined in the PA between the City, The Department, and the SHPO.	ED, page 2-1-89 - 2-1-90	EPW Project Manager, EPW Project Engineer	Examination	N						

MITIGATION MONITORING and REPORTING RECORD
(MMRR)
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Task and Brief Description	Ref.	Responsible Branch / Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed Initial / Date	Remarks	Environmental Compliance Initial / Date
<p>Water Quality</p> <p>Storm Water Pollution Prevention Plan, Combined Storm Sewer System. In compliance with the Article 4 of the Public Works Code and the City's Construction Site Water Pollution Prevention Program, the Project Applicant shall submit a site-specific SWPPP to the SFPUC for approval, prior to initiating construction activities in areas draining to the combined sewer system. The SFPUC requires implementation of appropriate BMPs from the California Stormwater Quality Association Stormwater BMP Handbook. Construction or the Caltrans Construction Site BMPs Manual. In accordance with SFPUC's requirements, the SWPPP shall include:</p> <ul style="list-style-type: none"> • An Erosion and Sediment Control Plan that includes a site map illustrating the BMPs that will be used to minimize onsite erosion and the sediment discharge into the combined sewer system, and a narrative description of those BMPs. Appropriate BMPs for Erosion and Sediment Control Plan may include: <ul style="list-style-type: none"> – Scheduling—Develop a schedule that includes sequencing of construction activities with the implementation of appropriate BMPs. Perform construction activities and control practices in accordance with the planned schedule. Schedule work to minimize soil disturbing activities during the rainy season. Schedule major grading operations for the dry season when practical. Monitor the weather forecast for rainfall and adjust the schedule as appropriate. • Erosion Control BMPs—Preserve existing vegetation where feasible, apply mulch or hydrosed areas until permanent stabilization is established, and use soil binders, geotextiles and mats, earth dikes and drainage swales, velocity dissipation devices, silt fences, or polyacrylamide to protect soil from erosion. • Wind Erosion BMPs—Apply water or other dust palliatives to prevent dust nuisance, prevent overwatering which can cause erosion. Alternatively, cover small stockpiles of areas that are not inactive for seven or more days. • Sediment Control BMPs—Install silt fences, sediment basins, sediment traps, check dams, fiber rolls, sand or gravel bag barriers, straw bale barriers, approved chemical treatments, and storm drain inlet protection to minimize the discharge of sediment. Employ street sweeping to remove sediment from streets. • Tracking Controls—Stabilize the construction site entrance to prevent tracking of sediment onto public roads by construction vehicles. Stabilize onsite vehicle transportation routes immediately after grading to prevent erosion and control dust. Install a tire wash area to remove sediment from tires and undercarriages. • Nonstormwater Management BMPs that may include water conservation practices, dewatering practices that minimize sediment discharges, and BMPs for paving and grinding activities, identifying illicit connections and illegal dumping, irrigation and other planned or unplanned discharges of potable water, vehicle and equipment cleaning, fueling, and maintenance, concrete curing and finishing, temporary batch plants, implementing shoreline improvements and working over water. Discharges from dewatering activities shall comply with the SFPUC's Batch Wastewater Discharge Requirements that regulate influent concentrations for various constituents. • Waste Management BMPs shall be implemented for material delivery, use, and storage, stockpile management, spill prevention and control, solid and liquid waste management, hazardous waste management, contaminated soil management, concrete waste management, and septic/sewage waste management. • SWPPP Training Requirements—Construction personnel will receive training on the SWPPP and BMP implementation. • Site Inspections and BMP Maintenance—An inspector will be hired by the SWPPP to inspect the site on a regular basis, before and after a storm event, and once each 24-hour period during extended storms. • Construction and Land Disturbance—An inspector will be hired by the SWPPP to inspect the site on a regular basis, before and after a storm event, and once each 24-hour period during extended storms. • Associated with Construction and Land Disturbance Activities (Construction General Permit), the Project Applicant shall undertake the proposed BTI Project in accordance with a project-specific SWPPP prepared by Qualified SWPPP Developer, The San Francisco Bay RWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the Construction General Permit issued by the SFRWQCB. The SWPPP shall include, as applicable, all BMPs required in Attachment C of the Construction General Permit for Risk Level 1 dischargers, Attachment D for Risk Level 2 dischargers, or Attachment E for Risk Level 3 dischargers. In addition, recommended BMPs, subject to review and approval by the SFRWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the SFRWQCB's review process, since the SFRWQCB has final authority over the terms of the SWPPP. <ul style="list-style-type: none"> • Scheduling <ul style="list-style-type: none"> – To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season. Schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices. – Sequence construction activities to minimize the amount of time that soils remain disturbed. – Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work. – Install erosion and sediment control BMPs prior to the start of any ground-disturbing activities. • Erosion and Sedimentation <ul style="list-style-type: none"> – Preserve existing vegetation in areas where no construction activity is planned or where construction activity will occur at a later date. – Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, and/or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material) except in actively cultivated areas. – Install silt fences, cor rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, down-slope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation. – Install temporary slope breakers during the rainy season on slopes greater than 5% where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at specific intervals required by the SFRWQCB. – Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets. – Dewater and treat stormwater using sedimentation basins, sediment traps, biker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives. – Install check dams, where applicable, to reduce flow velocities. Check dams reduce erosion and allow sediment to settle out of runoff. – Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows. – Implement control measures such as spraying water or other dust palliatives to alleviate nuisance caused by dust. • Groundwater Dewatering <ul style="list-style-type: none"> – Prepare a dewatering plan prior to excavation specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering. 	ED, page 22-14 - 22-15	DPW Project Manager, Consultative Consultant	Construction	N				
<ul style="list-style-type: none"> • Associated with Construction and Land Disturbance Activities (Construction General Permit), the Project Applicant shall undertake the proposed BTI Project in accordance with a project-specific SWPPP prepared by Qualified SWPPP Developer, The San Francisco Bay RWQCB, the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the Construction General Permit issued by the SFRWQCB. The SWPPP shall include, as applicable, all BMPs required in Attachment C of the Construction General Permit for Risk Level 1 dischargers, Attachment D for Risk Level 2 dischargers, or Attachment E for Risk Level 3 dischargers. In addition, recommended BMPs, subject to review and approval by the SFRWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the SFRWQCB's review process, since the SFRWQCB has final authority over the terms of the SWPPP. <ul style="list-style-type: none"> • Scheduling <ul style="list-style-type: none"> – To reduce the potential for erosion and sediment discharge, schedule construction to minimize ground disturbance during the rainy season. Schedule major grading operations during the dry season when practical, and allow enough time before rainfall begins to stabilize the soil with vegetation or to install sediment-trapping devices. – Sequence construction activities to minimize the amount of time that soils remain disturbed. – Stabilize all disturbed soils as soon as possible following the completion of ground disturbing work. – Install erosion and sediment control BMPs prior to the start of any ground-disturbing activities. • Erosion and Sedimentation <ul style="list-style-type: none"> – Preserve existing vegetation in areas where no construction activity is planned or where construction activity will occur at a later date. – Stabilize and revegetate disturbed areas as soon as possible after construction with planting, seeding, and/or mulch (e.g., straw or hay, erosion control blankets, hydromulch, or other similar material) except in actively cultivated areas. – Install silt fences, cor rolls, and other suitable measures around the perimeter of the areas affected by construction and staging areas and around riparian buffers, storm drains, temporary stockpiles, spoil areas, stream channels, swales, down-slope of all exposed soil areas, and in other locations determined necessary to prevent off-site sedimentation. – Install temporary slope breakers during the rainy season on slopes greater than 5% where the base of the slope is less than 50 feet from a water body, wetland, or road crossing at specific intervals required by the SFRWQCB. – Use filter fabric or other appropriate measures to prevent sediment from entering storm drain inlets. – Dewater and treat stormwater using sedimentation basins, sediment traps, biker tanks, or other measures to ensure that discharges to receiving waters meet applicable water quality objectives. – Install check dams, where applicable, to reduce flow velocities. Check dams reduce erosion and allow sediment to settle out of runoff. – Install outlet protection/energy dissipation, where applicable, to prevent scour of the soil caused by concentrated high velocity flows. – Implement control measures such as spraying water or other dust palliatives to alleviate nuisance caused by dust. • Groundwater Dewatering <ul style="list-style-type: none"> – Prepare a dewatering plan prior to excavation specifying methods of water collection, transport, treatment, and discharge of all water produced by construction site dewatering. 	ED, page 22-15 - 22-19	DPW Project Manager, Construction Consultant	Construction	N				

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<p>requirements of Article 4.1 of the San Francisco Public Works Code, and performance standards established by the SFPUC in the San Francisco Stormwater Design Guidelines.</p> <p>The Draft San Francisco Stormwater Design Guidelines have been developed to satisfy the Municipal Stormwater General Permit requirements for new development and redevelopment projects in areas served by separate storm sewers, and were adopted in December 2009. The BTI Project Applicant shall comply with the requirements of the Draft San Francisco Stormwater Design Guidelines. Upon adoption of the Final Stormwater Design Guidelines, the BTI Project shall comply with the Final San Francisco Stormwater Design Guidelines, the BTI Project Applicant shall submit a Stormwater Control Plan (SCP) to the SFPUC, as part of the development application submitted for approval. The SCP shall demonstrate how the following measures would be incorporated into the BTI Project:</p> <ul style="list-style-type: none"> Low impact development site design principles (e.g., preserving natural drainage channels, treating stormwater runoff at its source rather than in downstream centralized outfalls). Source control BMPs for landscaped areas shall be documented in the form of a Landscape Management Plan that relies on Integrated Pest Management and also includes pesticides and fertilizer application guidelines. Treatment control measures (e.g., berms, detention, porous pavement, vegetated swales) targeting the BTI Project-specific constituents of concern (COCs): sediment, pathogens, metals, nutrients (nitrogen and phosphorus), organic-demanding substances, organic compounds (e.g., PCBs, pesticides), oil and grease, and trash and debris. The SCP shall demonstrate that the BTI Project has sufficient land available to support the proposed BMP facilities sized per the required water quality design. Volume-based BMPs will be sized to runoff resulting from 0.75 inches of rainfall, and low-based BMPs will be sized to treat runoff resulting from a rainfall intensity of 0.2 inches per hour. The BTI Project Applicant shall prepare a SWMP for approval by the SFPUC. The SWMP shall include plans for the storm drain infrastructure and plans for stormwater management controls (e.g., vegetated swales, dry wells). The storm drain infrastructure shall illustrate conveyance of the 5-year storm event in a separate storm drain piped system, and conveyance of the 100-year storm event in the street and drainage channel ROWs. In accordance with the requirements of Article 4.1 of the San Francisco Public Works Code, an erosion and sediment control plan shall be prepared to prevent contaminated water from entering the combined storm sewers. The plan shall be prepared by a licensed professional and be submitted to the SFPUC for review and approval prior to construction. 	ED, page 22-19 - 22-20	DPW Project Manager, Construction Contractor	Construction	N				
<p>Geology/Soils/Sediment Topography</p> <p>To evaluate the potential impact of ground shaking, a seismic study will be performed by a qualified civil/structural engineer to develop site-specific design ground motion parameters with respect to variations in the subsurface conditions within the BTI Project study area, and with respect to the probabilistic (or deterministic) seismic event (i.e., an earthquake produced by a nearby active fault such as the San Andreas, San Gregorio, or Hayward Fault). The impacts of ground shaking will be reduced by designing structures and foundations to withstand inertial forces imposed by ground motions associated with the design earthquake event. In accordance with applicable codes and design criteria established by the seismic study.</p> <p>Employing ground improvement measures such as (1) over-excavation and replacement with engineered fill, or (2) deep dynamic compaction, may reduce or eliminate the impacts of liquefaction beneath the Build Alternative roadways. For sites on which specific structures are proposed (e.g., HPS Transit Center and the power substation) mitigation measures such as stone columns, vibro-compaction, soil-cement columns, or jet grouting may be considered to mitigate liquefaction impacts on structures and provide additional bearing support beneath foundations. Additionally, the need for liquefaction mitigation and design of appropriate mitigation schemes will be determined during the early design phase. The need for liquefaction mitigation and design of appropriate mitigation schemes will be determined during the early design phase. The need for liquefaction mitigation and design of appropriate mitigation schemes will be determined during the early design phase.</p> <p>Engineering Geologist and additional field exploration, soil/rock sampling and testing, and engineering slope stability analysis be carried out as needed. For slopes deemed unstable, remedial measures may include: (1) excavation and removal of the unstable mass and replacement with engineered fill keyed into the slope and backed as necessary; (2) rock bolting to stabilize adversely oriented and/or unstable rock masses; (3) construction of a soil nail wall; or (4) construction of a rock-fall catch fence, wall, or meshing/net to contain landslide debris.</p> <p>Consolidation settlement of younger bay mud will be mitigated by preloading ("surcharging") areas that are expected to be subjected to new loading related to the BTI Build Alternative design improvements. Preloading the selected area will induce site settlement in advance of the roadway improvement construction so that final design grades are achieved without further consolidation. Surcharging is usually achieved by placement of temporary earth fill. The consolidation of the zone compressible soil (e.g., younger bay mud) is usually accelerated by enhancing the soil drainage through the placement of prefabricated wick drains.</p> <p>Measures to reduce or eliminate the effects of soil corrosion on buried steel elements may include increased steel thicknesses, encasement with protective epoxy, and cathodic protection. Sulfate-resistant concrete will be used for concrete structures embedded in soils with high sulfate content.</p>	ED, page 22-26	DPW Project Manager, Qualified Geotechnical Engineer	PS&E, Final Design	N				
<p>Measures to control surface soil erosion during construction will include implementation of a SWPPP and use of BMPs for the construction sites. Installation of erosion control measures is typically the responsibility of the construction contractor and commonly includes the installation of drainage ditches, sediment basins, silt fences, erosion control blankets, straw bales, and plastic soil covers. Dust is typically controlled by spraying the ground with water, or a non-toxic soil stabilizer. The Occupational Safety and Health Act (OSHA) requires employers to comply with hazard-specific safety and health standards pursuant to Section 1017 of the OSHA. Employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Potential seismic-related hazards to workers during construction are expected to be less than substantial with compliance with the OSHA and compliance with the Department's standard design and construction guidelines.</p>	ED, page 22-27	DPW Project Manager, Qualified Geotechnical Engineer, Construction Contractor	PS&E, Final Design, Construction	N				
<p>Hazards and Hazardous Materials</p>	ED, page 22-27	DPW Project Manager, Qualified Geotechnical Engineer, Construction Contractor	PS&E, Final Design, Construction	N				

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<p>The DCP project area is largely underground, and underground means any contamination may be sporadically located, because of these characteristics, a Phase II investigation at the stage of design would not substantially contribute to accurate and representative subsurface information to inform the final project design and any consequential avoidance, minimization and/or mitigation measures. For this reason, and because of the height of the project (see also Figure 1-3), a Preliminary Site Investigation/Phase II investigation shall be performed during the final design phase of the project development. The investigation shall be implemented after a Sampling and Analysis Plan has been approved by the San Francisco Department of Public Health (SFPDH) and the Department. The purpose of the investigation would be to characterize and classify soil that would be excavated as part of B11 Project implementation and to determine groundwater quality in areas where excavations would intercept the shallow groundwater table. Following the investigation, appropriate avoidance, minimization and/or mitigation measures will be developed to ensure that exposure to hazardous waste will not occur.</p> <p>Air Quality</p> <p>Activities would also occur during some transport routes. Most of the construction effects to air quality would be short-term in duration and, therefore, not expected to result in long-term adverse conditions.</p> <p>To minimize dust from construction, the San Francisco Department of Public Health (SFPDH) Code Article 22B, Construction Dust Control, requires for construction projects within 1,000 feet of sensitive receptors (residence, school, childcare center, hospital or other health care facility or group-housing quarters) preparation of a site-specific dust control plan (DCP). That plan must include a number of measures intended to minimize visible dust. These measures contain all the dust control measures presented in the BAAQMD CEQA Guidelines, however the San Francisco Health Code requires the watering frequency as well as adding monitoring, re-crodding, third-party verification, and community outreach requirements not found in the BAAQMD guidelines. Implementation of the SFPDH dust control measures would minimize emissions and potential effects of construction-related effects. The DCP shall be submitted to and approved by the SFPDH prior to the beginning of construction, and the Project Applicant must ensure the implementation of all specified dust control measures throughout the construction project. The DCP shall require compliance with the following specific mitigation measures to the extent deemed necessary by the SFPDH to achieve no visible dust at the property boundary.</p> <ul style="list-style-type: none"> • Submit a map to the San Francisco Director of Health showing all sensitive receptors within 1,000 feet of the site • Keep all graded and excavated areas, areas around soil improvement operations, visibly dry unpaved roads, parking and staging areas, watered at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary whenever wind speeds exceed 15 mph • Analyze wind direction and placement of upwind and downwind particulate dust monitors. • Keep records for shutdown conditions based on wind, dust migration, or if dust is contained within the property boundary but not controlled after a specified number of minutes. • Establish a hotline for surrounding community members who may be potentially affected by project-related dust. Contact person shall respond and take corrective action within 48 hours. Post publicly visible signs around the site with the hotline number as well as the phone number of the BAAQMD and make sure the numbers are given to adjacent residents, schools, and businesses. • Limit the area subject to construction activities at any one time. • Install dust curtains and windbreaks on windward and downwind sides of the property lines, as necessary. Windbreaks on windward side should have no more than 50% air permeability. • Limit the amount of soil in trucks hauling soil around the job site to the size of the truck bed and securing with a tarpaulin or ensuring the soil contains adequate moisture to minimize or prevent dust generation during transportation. • Enforce a 15 mph speed limit for vehicles entering and exiting construction areas. • Install and use wheel washers to clean truck tires. • Sweep affected streets with water sweepers at the end of the day. • Halt all construction activities during periods of sustained strong winds, hourly average wind speeds of 25 mph. • Apply soil stabilization methods to inactive areas. • Sweep off adjacent streets to reduce particulate emissions. 	ED, page 2-2-39	EPW Project Manager	Phase, Final Design	V						
	ED, 2-2-53 - 2-2-55	EPW Project Manager, Contractor	Construction	N						

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<p>• Hire an independent third party to conduct inspections for visible dust and keep records of those inspections</p> <ul style="list-style-type: none"> • Minimize the amount of excavated material or waste materials stored at the site • Prevent visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property <p>Implementation of the following measures prescribed by Caltrans, some of which may also be required for other purposes such as asbestos dust or storm water pollution control, would reduce the potential for air quality effects from construction activities</p> <ul style="list-style-type: none"> • The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010) • Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. • Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18 • Water or dust palliative will be applied to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the ROW line depending on local regulations. • Soil binder will be spread on any unpaved roads used for construction purposes, and all project construction parking areas • Trucks will be washed off as they leave the ROW as necessary to control fugitive dust emissions • Construction equipment and vehicles shall be properly lined and maintained. Low sulfur fuel shall be used in all construction equipment as provided in California Code of Regulations Title 17, Section 93114 • Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation of disturbed slopes as needed to minimize construction effects on existing communities. As mentioned, the City of San Francisco Health Code and BAAQMD require the development of a fugitive dust control plan. • Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly • To the extent feasible, establish environmentally sensitive areas or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited • Use track out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic • Minimize emission of dust (particulate matter) during transportation • Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter • To the extent feasible, route and schedule construction traffic to reduce congestion and related air quality effects caused by idling vehicles along local roads during peak travel times • Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw • Implement emission control device installation on construction equipment. To reduce diesel particulate matter (DPM) emissions during project construction, the Project Applicant shall require construction equipment used for the B11 Project to utilize emission control technology such that 50% of the fleet will meet USEPA Tier 2 engine outflow with ERL level 3 VOECs (Verified Diesel Emission Control Strategies) for particulate matter control (or equivalent) during the first year of the project. • Prior to beginning a grading, excavation, site building or other permit from the City that includes soil disturbance activities, the Project Applicant shall obtain approval of an Asbestos Dust Mitigation Plan (ADMP) from BAAQMD for areas over one acre that potentially contain naturally occurring asbestos. Compliance with the ADMP and DCP mentioned in Section 3.5 may be required as a condition of the permit. The ADMP shall be submitted to and approved by the BAAQMD prior to the beginning of construction, and the Project Applicant must ensure the implementation of all specified dust control measures throughout the construction project. The ADMP shall require compliance with the following specific control measures to the extent deemed necessary by the BAAQMD to meet its standard • For construction activities disturbing less than one acre of rock containing naturally occurring asbestos, the following specific dust control measures must be implemented in accordance with the asbestos Airborne Toxic Control Measure (ATCM) before construction begins and each measure must be maintained throughout the duration of the construction project <ul style="list-style-type: none"> - Limit construction vehicle speed at the work site to 15 mph - Sufficiently wet all ground surfaces prior to disturbance to prevent visible dust emissions from crossing the property line - Keep all graded and excavated areas, around soil improvement operations, visibly dry unpaved roads, parking and staging areas wetted at least three times per shift daily with reclaimed water during construction to prevent visible dust emissions from crossing the property line. Increased watering frequency may be necessary when wind speeds exceed 15 mph. - Adequately wet all storage piles, treat with chemical dust suppressants, or cover piles when material is not being added to or removed from the pile - Wash down all equipment before moving from the property onto a paved public road - Clean all visible track out from the paved public road by street sweeping or a High-Efficiency Particulate Air (HEPA) filter equipped vacuum device within 24 hours • For construction activities disturbing greater than one acre of rock containing naturally occurring asbestos, construction contractors are required to prepare an ADMP specifying measures that will be taken to ensure that no visible dust crosses the property boundary during construction. The plan must specify the following measures to the extent deemed necessary by the BAAQMD to meet its standard <ul style="list-style-type: none"> - Prevent and control visible track out from the property onto adjacent paved roads. Sweep with reclaimed water at the end of each day if visible soil material is carried out from property - Ensure adequate wetting or covering of active storage piles - Hydroseed or apply mulch to soil stabilizers to disturbed surface areas and storage piles greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil that will remain inactive for seven days or more - Control traffic on onsite unpaved roads, parking lots, and staging areas—including a maximum vehicle speed of 15 mph or less - Provide as much water as necessary to control dust (without creating run-off) in any area of land clearing, earth movement, excavation, drillings, and other dust-generating activity - Control dust emissions from off-site transport of naturally occurring asbestos containing materials - Stabilize disturbed areas following construction 	ED, page 22-56-22-57	DWP Project Manager Construction Contractor	Final Design Construction	N						

Note

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<p>no adverse noise effects from construction are anticipated because construction would be conducted in accordance with certain siting and specification criteria 14.8.02 and applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. Further, implementing the following measures would minimize the temporary noise effects from construction:</p> <ul style="list-style-type: none"> • All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmodified exhaust. • As directed by Caltrans, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources. 	ED, page 2.2.74	DPW Project Manager, Construction Contractor	Construction	N						

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<p>Biological Environment - Animal Species</p> <p>Fish and Game Code.</p> <p>1. Not more than 15 days prior to construction activities that occur between February 1 and August 31, surveys for nesting birds shall be conducted by a qualified biologist (one familiar with the breeding biology and nesting habits of birds that may breed in the Project vicinity) that is selected by the Project Proponent (the City and County of San Francisco). Surveys shall cover the entire area to be affected by construction and the area within a 250-foot buffer of construction or ground-disturbing activities. The results of the surveys, including survey dates, times, methods, species observed, and a map of any discovered nests, shall be submitted to the Project Proponent. If no active avian nests (i.e., nests with eggs or young) are identified on or within 250 feet of the limits of the disturbance area, no further mitigation is necessary. Phased construction work shall require additional surveys if vegetation or building removal has not occurred within 15 days of the initial survey or is planned for an area that was not previously surveyed. Alternatively, to avoid impacts, the Project Proponent shall begin construction after the previous breeding season for local birds has ended (after August 31) and before the next breeding season begins (before February 1).</p> <p>2. If active nests (with eggs or young) of protected avian species are found within 250 feet of the proposed disturbance area, a minimum 250-foot no-disturbance buffer zone surrounding active raptor nests and a minimum 100-foot buffer zone surrounding nests of other special-status or protected avian species shall be established until the young have fledged. Project activities shall not occur within the buffer as long as the nest is active. The size of the buffer area may be reduced if a qualified biologist familiar with the species' nesting biology (as approved by the Project Proponent) and CDFG determine it would not be likely to have adverse effects on the particular species. Alternatively, certain activities may occur within the aforementioned buffers, with CDFG concurrence, if a qualified biologist monitors the activity of nesting birds for signs of agitation while those activities are being performed. If the birds show signs of agitation suggesting that they could abandon the nest, activities would cease within the buffer area. No action other than avoidance shall be taken without CDFG consultation.</p> <p>3. Completion of the nesting cycle (to determine when construction near the nest can commence) shall be determined by a qualified biologist experienced in identification and biology of the specific special-status or protected species.</p> <p>Biological Environment - Invasive Species</p> <p>1. In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from the FHWA, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, such as the portions of Innes Avenue and Hunters Point Boulevard adjacent to serpentine communities, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.</p> <p>2. Prior to grading, infested areas will be cleared of vegetation and all vegetative material will be incinerated offsite or disposed of in a landfill, taking care to prevent any seed dispersal during the process.</p> <p>3. Following Project Implementation, native seed from a local source will be planted on all disturbed ground via hydroseed that will not be landscaped and maintained and native species will be used in landscaping to the extent practicable.</p> <p>4. After Project implementation, the soil substrate within graded areas such as the disturbed coastal scrub that was affected during construction will be stabilized by native hydroseed, preventing the majority of nonnative, invasive plant species' seeds from germinating. In addition, noninvasive landscaping plantings will be established.</p>	<p>EO, page 23-12, 23-13</p>	<p>DPM Project Manager, Qualified Biologist</p>	<p>Prior to Construction Permit</p>	<p>N</p>						
	<p>EO, page 23-16</p>	<p>DPM Project Manager, Qualified Biologist</p>	<p>Overlaid upon completion of evaluation</p>	<p>N</p>						

Appendix F References

APPENDIX F – REFERENCES

1.0 PROPOSED PROJECT

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List of Technical Studies

LIST OF TECHNICAL STUDIES

Copies of the following technical studies prepared for the BTI Project are available for review at:

- California Department of Transportation, District 4 Office of Local Assistance, 111 Grand Avenue, Oakland, CA 94623
- City and County of San Francisco, Department of Public Works, 30 Van Ness Avenue, 5th Floor, San Francisco, CA 94102

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